

# LOW TEMPERATURE COOKING AND HOLDING GUIDELINES

DELUXE CONTROL OVENS



**ALTO-SHAAM®**





## LOW TEMPERATURE COOKING AND HOLDING OVENS GENERAL INDEX

### Introduction

Alto-Shaam Halo Heat .....	1
Low Temperature Cooking Facts	
Meat and Nutrition .....	2
Shrinkage Control and Cooking Time .....	3
Preventing Bacteria Growth .....	3
Labor and Equipment Cost Reduction .....	4
Capacities and Dimensions .....	5
Options and Accessories .....	6

### Operation

General Operation — Deluxe Control Ovens	
Oven Characteristics .....	7
Start-Up .....	7
Control Features .....	8
General Operation .....	9-16
Chef Operating Tips .....	17

### Food Holding and Sanitation

Reheating .....	18
Holding Times .....	18
Food Holding - Function & Value .....	19
General Holding Guidelines .....	20
Holding Temperature Range .....	20
Food Holding and Sanitation .....	21
Food Safety Guidelines .....	22

### Cleaning and Maintenance .....

23-24

### Cooking Guidelines

Product Index .....	25
Quick Reference .....	25
Beef .....	26-29
Veal .....	29
Lamb .....	30
Pork .....	31-33
Processed Meats .....	33
Poultry .....	34-37
Fish .....	38
Miscellaneous .....	39-45

### Cooking & Smoking Guidelines

Beef Brisket .....	46
Pastrami .....	46
Beef Tongue .....	46
Fresh Hams .....	47
Pork Ribs .....	47
Pork Butt .....	47
Pork Belly .....	48
Duck .....	48
Turkey .....	48
Fish Fillets .....	49
Salmon, Whole .....	49
Shrimp .....	49
Cold Smoked Salmon .....	50
Cold Smoked Canned Tomatoes .....	51



Alto-Shaam has established a twenty-four hour emergency service call center to offer immediate customer access to a local authorized service agency outside of standard business hours. The emergency service access is provided exclusively for Alto-Shaam equipment and is available throughout the United States through the use of Alto-Shaam's toll-free number. Emergency service access is available seven days a week including holidays.





# ALTO-SHAAM®

## LOW TEMPERATURE COOKING INTRODUCTION

**HALO  
HEAT®**



### **Welcome to the cost saving convenience of Low Temperature Cooking.**

In 1968, Alto-Shaam invented the first automatic, commercial cook and hold oven featuring the principle of Halo Heat. The heating method provided by Halo Heat low temperature cooking and holding ovens consists of an electric thermal cable that encircles the entire cooking and holding chamber. This creates a gentle blanket or HALO of radiant heat — surrounding food with a consistent and uniform temperature with no air movement inside the oven compartment. This gentle heating concept cooks at low temperatures and at a high level of humidity to preserve product moisture, flavor, and nutrition. Halo Heat ovens are designed to convert automatically from a cooking temperature to a holding temperature where the product can remain until it is ready to be served.

Halo Heat is an entirely different system of cooking. Utilizing this uniform heat source, Halo Heat dramatically reduces meat shrinkage; provides natural enzyme

(aging) action for more tender, flavorful meat; and preserves natural juices along with nutritional values in all foods. Halo Heat cooking reduces energy cost, cuts back on labor and handling, and solves kitchen space problems. There is no mechanical ventilation or oven hood necessary in most areas so the ovens can be moved wherever they are needed.

Read this booklet carefully. Halo Heat is a cooking system that requires minimal care once you have learned the basic principles. For best results with many products, we recommend you start your cooking cycle the evening before — for serving the next day. In many areas, off-peak power rates are also lower at night.

If anything you cook in a Halo Heat low temperature cooking and holding oven doesn't meet your highest standards of quality, please contact one of our food service professionals for help. Usually, only a minor change in procedure is required.

# INTRODUCTION

## LOW TEMPERATURE COOKING FACTS

### **MEAT AND NUTRITION**

Meat plays a significant role in the diet; therefore, one of the primary goals in food preparation is proper nutrition. Meat is one of the best sources of protein; is a rich source of B vitamins such as thiamine, riboflavin, and niacin; and includes fats, carbohydrates, minerals, pigments, enzymes and water.

All of these elements are affected by cooking, but over-heating destroys many of them. Low temperature Halo Heat cooking helps preserve unstable, heat-sensitive vitamins and nutrients.

A report on the Nutrient Analysis of Roast Beef, conducted by the University of Wisconsin-Stout in July 1971, concluded, "...it is apparent that Alto-Shaam cooking method results in lower moisture losses. Even after a 24 hour holding period, the Alto-Shaam product is nutritionally equal to, and possibly better than beef roast cooked in a conventional oven and removed immediately after cooking."

Fat contributes greatly to the flavor of meat. During the cooking process, fat not only melts, but also changes chemically. With low temperature cooking there is less chemical change and less fat melt resulting in a more flavorful finished product.

The enzymes found in meat break down the tissues and act as natural tenderizing agents. A premium price is paid for aged meats where this enzyme action has already started, however; enzymes are destroyed by high temperatures.

Low temperature cooking does not destroy these enzymes and, particularly in the hold cycle, creates this natural chemical action to tenderize or age the meat right in the oven. For this reason, it is important to use fresh beef and it is essential to allow the product to remain in the hold cycle for at least the minimum amount of time suggested in the individual procedures. The longer meat is left in the hold cycle the more tender it becomes, making the purchase of more expensive, aged meat unnecessary.

Meat is seventy to seventy-five percent water. High temperatures cause this water to evaporate during cooking resulting in loss of product moisture. Cooking at low temperatures in a Halo Heat oven retains the maximum amount of water content resulting in a juicier finished product and an extended holding life.

Along with better nutrition, a more tender finished product, less shrinkage and higher moisture content, meat will not require the addition of as much salt as needed with conventional cooking methods. Natural flavors are preserved. This is a significant factor in today's health conscious diets.

## LOW TEMPERATURE COOKING FACTS

### SHRINKAGE CONTROL AND COOKING TIME

THERE ARE TWO MAJOR FACTORS CONTROLLING MEAT SHRINKAGE OR COOKING LOSSES.

#### 1. Temperature at which meat is cooked:

The higher the temperature at which meat is cooked the more shrinkage will result. Over-cooked meat also results in higher losses. Higher temperatures and over-cooking draws moisture to the surface and this moisture evaporates or drips out of the meat.

#### 2. Internal temperature of the meat:

Like over-cooking, as meat is brought to a higher internal temperature shrinkage is increased. For these two reasons, it is suggested most cuts of red meat be cooked at 250°F (121°C) and that all cooking be based on internal product temperature. The use of a thermometer is encouraged.

THERE ARE FOUR MAJOR FACTORS INVOLVED IN DETERMINING COOKING TIMES FOR MEAT:

#### 1. The degree of aging on the meat:

Aged meat will cook faster, shrink more, and has a much shorter holding life than fresh meat.

#### 2. Internal temperature before cooking:

Meat should be placed in a preheated oven directly from a refrigerated temperature of 38° to 40°F (3° to 4°C). Meat cooked from a frozen state will require approximately one and one-half to two times the normal cooking time. In addition, freezing ruptures tissue cells creating additional moisture loss during the cooking process and will result in more shrinkage.

#### 3. Desired degree of doneness:

The higher the degree of internal temperature required, the longer the necessary cooking time. Cooking times in this guideline are based on the most popular internal product temperatures.

#### 4. Quantity and quality of product.

### TO CALCULATE MEAT SHRINKAGE

STARTING WEIGHT (Weight of Raw Product)  
- MINUS: ENDING WEIGHT (Weight of Cooked Product)  
EQUALS: AMOUNT OF SHRINKAGE

AMOUNT OF SHRINKAGE (Total Weight Lost in Cooking)  
÷ DIVIDED BY: STARTING WEIGHT (Weight of Raw Product)  
EQUALS: PERCENT OF SHRINKAGE

EXAMPLE:      Raw Beef Roast:      100 lb      (45 kg)  
                      Cooked Beef Roast:      -95 lb      (-43 kg)  
                      = AMOUNT OF SHRINKAGE:      5.0 lb      (2 kg)

SHRINKAGE DIVIDED BY      0.05 = 5%      0.05 = 5%  
STARTING WEIGHT: 100 √ 5.0      45 √ 2.0

EQUALS: PERCENT OF SHRINKAGE

### PREVENTING BACTERIA GROWTH

The surface of raw meat may become contaminated in processing, handling by the butcher or chef, or by other means. Food contamination can also be caused by unsanitary personal hygiene and work habits, unclean slicers, knives, and probes, or by faulty operational procedures. It is important, therefore, that

sanitary procedures be followed at all times during food preparation and handling. This is your main protection in guarding against food contamination. For additional information see the *Cleaning and Maintenance* section of this manual.

# INTRODUCTION

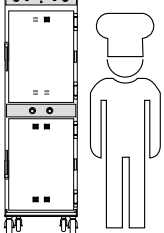
## LOW TEMPERATURE COOKING FACTS

### LABOR AND EQUIPMENT COST REDUCTION

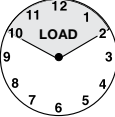
Halo Heat ovens are easy to operate and maintain. After the raw product is placed in the oven and the controls are set, there is no need to check, stir, or adjust the time or the temperature. Minimal time is spent attending the product during cooking. This advantage, combined with the automatic conversion to the hold cycle, frees key personnel to concentrate on other tasks including final product and presentation.

### HALO HEAT REDUCES LABOR


LOAD OVEN AT CLOSING



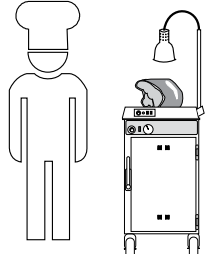
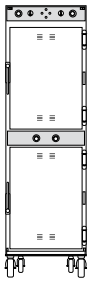
- PRODUCT CAN BE COOKED THE NIGHT BEFORE FOR SERVING THE NEXT DAY.
- COOKING TAKES PLACE OUTSIDE PEAK PREPARATION HOURS.
- PRODUCT DOES NOT NEED CHECKING.
- OFF-PEAK ELECTRICAL RATES ARE USED.
- KEY PERSONNEL CAN CONCENTRATE ON OTHER TASKS.



### DISTRIBUTES WORK LOADS



REMOVE ROASTS NEXT DAY









CARVE, PLATE AND SERVE

When cooking in a Halo Heat oven at a temperature of 250°F (121°C), outside venting and expensive exhaust hoods are not necessary in most areas. Kitchens remain cooler, lowering energy costs by reducing the exchange of heated air. Because the ovens do not need outside venting, they can be put almost anywhere — in the corner of the kitchen, on a buffet line, or in a banquet room. The ovens can also be built into a counter or to save space, can be stacked in combination with another Halo Heat oven or holding cabinet of the same or similar dimensions.





Cooking at low temperatures also reduces cleaning time. Most food does not normally carbonize or burn on the interior of the oven.



## LOW TEMPERATURE COOKING FACTS

	Model	Product Capacity	Shelf Capacity	Full-Size Pans (GN1/1) 12" x 20"	18" x 26" Full-Size Sheet Pans	Overall Dimensions
	AS-250	25 lbs. (11 kg)	1	1	—	17-1/4" x 33-9/16" x 16-3/4" (438mm x 853mm x 425mm)
	300-TH/III	36 lbs (16 kg)	3	3	—	18-15/16" x 16-13/16" x 25-3/16" (480mm x 426mm x 643mm)
	500-TH/III	40 lbs (18 kg)	2	4	—	33-1/2" x 19" x 26-11/16" (850mm x 482mm x 678mm)
	750-TH/III	100 lbs (45 kg)	3	10	5	33-1/2" x 26-5/8" x 31-3/4" (851mm x 676mm x 805mm)
	1000-TH/III	120 lbs (54 kg)	3	8	8	40-3/8" x 23-1/2" x 31-3/4" (1024mm x 596mm x 805mm)
	1200-TH/III	240 lbs (109 kg)	3	4	8	75-3/4" x 22-9/16" x 32-1/4" (1924mm x 573mm x 819mm)

## SMOKERS

	767-SK/III	100 lbs (45 kg)	2 shelves 1 rib racks	9	5	33-1/2" x 25-3/4" x 31-11/16" (851mm x 653mm x 805mm)
	1767-SK/III	200 lbs (91 kg)	4 shelves 2 rib racks	7	4	62-3/8" x 25-3/4" x 31-9/16" (1583mm x 654mm x 801mm)
	1000-SK/III	120 lbs (54 kg)	3 shelves 3 rib racks	3	7	40-5/16" x 22-5/8" x 31-1/2" (1024mm x 574mm x 799mm)
	1200-SK/III	240 lbs (109 kg)	3 shelves 3 rib racks	3	7	75-3/4" x 22-5/8" x 31-1/4" (1924mm x 574mm x 819mm)

INTRODUCTION

LOW TEMPERATURE COOKING FACTS

OPTIONS AND ACCESSORIES	300-TH/III	500-TH/III	750-TH/III	1000-TH/III	1200-TH/III
Bumper, Full Perimeter (NOT AVAILABLE WITH 2-1/2" CASTERS)	—	5011161	5010371	5009767	5009767
Carving Holder  PRIME RIB STEAMSHIP (CAFETERIA) ROUND	HL-2635 —	HL-2635 4459	HL-2635 4459	HL-2635 4459	HL-2635 4459
Casters - 2 RIGID, 2 SWIVEL W/BRAKE  5" (127mm) 3-1/2" (89mm) 3" (76mm) 2-1/2" (64mm)	— — 5015323 —	5004862 STANDARD — 5008022	5004862 STANDARD — 5008022	5004862 STANDARD — 5008022	5004862 STANDARD — —
Door Lock with Key	—	LK-22567	LK-22567	LK-22567	LK-22567
Drip Pan  WITH DRAIN WITHOUT DRAIN EXTRA DEEP	— — PN-2122	14813 11898 —	14831 11906 —	5005616 11906 15929	5005616 11906 15929
HACCP Data Logger (FACTORY INSTALLED)	5015563	5015563	5015563	5015563	5015563
Legs, 6" (152mm), Stemmed (SET OF FOUR)	—	5011149	5011149	5011149	5011149
Pan Grid, Wire - 18" x 26" PAN INSERT	—	—	PN-2115	PN-2115	PN-2115
Security Panel with key lock	—	5013939	5013936	5013934	5013934
Shelf, Stainless Steel  FLAT WIRE, REACH-IN FLAT WIRE, PASS-THROUGH RIB RACK	SH-2107 — —	SH-2326 SH-2326 —	SH-2324 SH-2327 SH-2743	SH-2325 SH-2346 SH-29474	SH-2325 SH-2346 SH-29474
Stacking Hardware	—	5004864	5004864	5004864	—

SMOKER OPTIONS AND ACCESSORIES	767-SK/III	1767-SK/III	1000-SK/III	1200-SK/III
Bumper, Full Perimeter (NOT AVAILABLE WITH 2-1/2" CASTERS)	5010371	5010371	5009767	5009767
Carving Holder  PRIME RIB STEAMSHIP (CAFETERIA) ROUND	HL-2635 4459	HL-2635 4459	HL-2635 4459	HL-2635 4459
Casters - 2 RIGID, 2 SWIVEL W/BRAKE  5" (127mm) 3-1/2" (89mm) 2-1/2" (64mm)	5004862 STANDARD 5008022	STANDARD 5008017 —	5004862 STANDARD 5008022	STANDARD 5008017 —
Door Lock with Key	LK-22567	LK-22567	LK-22567	LK-22567
Drip Pan  WITH DRAIN WITHOUT DRAIN EXTRA DEEP	14831 — —	14831 11906 —	5005616 11906 15929	5005616 11906 15929
HACCP Data Logger (FACTORY INSTALLED)	5015563	5015563	5015563	5015563
Legs, 6" (152mm), Stemmed (SET OF FOUR)	5011149	5011149	5011149	5011149
Pan Grid, Wire - 18" x 26" PAN INSERT	PN-2115	PN-2115	PN-2115	PN-2115
Security Panel with key lock	5013936	5013936	5013934	5013934
Shelf, Stainless Steel  FLAT WIRE, REACH-IN RIB RACK	SH-2324 SH-2743	SH-2324 SH-2743	SH-2325 SH-29474	SH-2325 SH-29474
Stacking Hardware	5004864	—	5004864	—
Wood Chips, bulk pack, 20 lb (9 kg)  Apple Cherry Hickory Maple	WC-22543 WC-22541 WC-2829 WC-22545	WC-22543 WC-22541 WC-2829 WC-22545	WC-22543 WC-22541 WC-2829 WC-22545	WC-22543 WC-22541 WC-2829 WC-22545

## GENERAL OPERATION - DELUXE CONTROL OVENS



### OVEN CHARACTERISTICS

The oven is equipped with a special, low-heat-density, heating cable. Through the **Halo Heat®** concept, the heating cable is mounted against the walls of the cooking and holding compartment to provide an evenly applied heat source, controlled by an oven sensor. The design and operational characteristics of the unit eliminates the need for a moisture pan or a heat circulating fan. Through even heat application, the food product is cooked evenly and provides the ability to hold foods for longer periods of time.

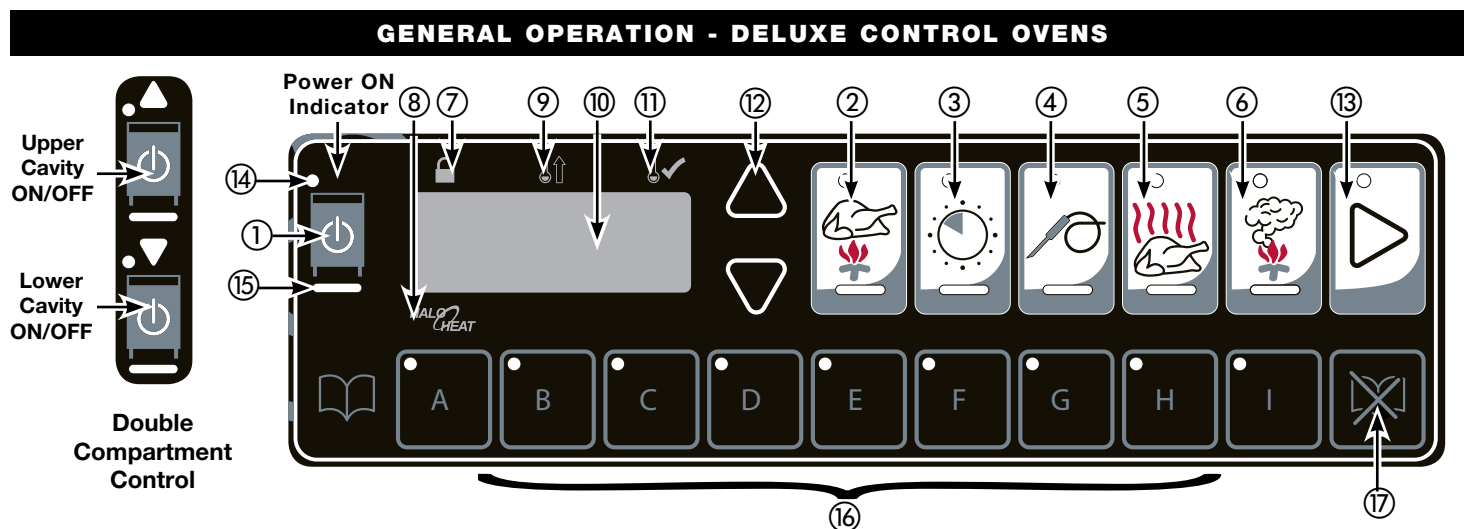
**Note:** The 300-TH/III is our counter top oven. When cooking a full load in the 300-TH/III, the food probe should be inserted in the food on the lowest shelf.

### START-UP

1. *Before operating the oven*, clean both the interior and exterior of the unit with a damp cloth and any good commercial detergent at the recommended strength. Rinse surfaces by wiping with a sponge and clean warm water to remove all detergent residue. Wipe dry with a clean cloth or air dry.
2. *Wipe door gaskets* and control panel dry with a soft cloth.
3. *Clean and install* the oven side racks, oven shelves, and external drip tray. Shelves are installed with curved edge toward the back of the oven. Insert the drip pan on the interior bottom surface of the oven.
4. *Before operating* the unit with product, become familiar with the operation of the controls. Read the following "Control Description" and "Operation" section of this cooking guide and begin by operating the various control functions.

<b>DANGER</b>	
	<p>AT NO TIME SHOULD THE INTERIOR OR EXTERIOR BE STEAM CLEANED, HOSED DOWN, OR FLOODED WITH WATER OR LIQUID SOLUTION OF ANY KIND. DO NOT USE WATER JET TO CLEAN.</p>
	<p><b>SEVERE DAMAGE OR ELECTRICAL HAZARD COULD RESULT.</b></p> <p>WARRANTY BECOMES VOID IF APPLIANCE IS FLOODED</p>

# OPERATION



## CONTROL FEATURES

### 1. On/Off Key

The on/off control system key operates the functions of the control panel. If there is any power loss during operation, the on/off indicator light will flash. To clear, push key and release.

### 2. Cook Key — Temperature range 200° to 325°F (93° to 162°C)

Used to select cooking mode and to review the cook temperature setting.

### 3. Time Key — Maximum time 24 hours

Used to select cook time and to review set time.

### 4. Probe Key — Temperature range 50° to 195°F (10° to 91°C)

Used to select internal product probe temperature mode and to review probe temperature setting.

### 5. Hold Key — Temperature range 60° to 205°F (15° to 96°C)

Used to select food holding mode and to review set holding temperature.

### 6. Smoker Key — Time range 0 to 4 hours

Used to select warm smoke or cold smoke and to review the smoke time remaining.

### 7. Lock Indicator

When illuminated, this symbol indicates settings used in the cooking sequence are locked and cannot be changed.

### 8. Halo Heat Indicator

When the oven is preheating, the Halo Heat indicator will illuminate during preheating and remain steady until the oven reaches the set cooking temperature. When the temperature has stabilized, the indicator will illuminate periodically as the oven calls for heat.

### 9. Oven Preheat Light

Illuminates until the oven is preheated or in ready mode.

### 10. LED Display

Indicates interior oven air temperature, internal product probe temperature, time, or when used in conjunction with other keys, will review original cooking, holding and probe temperature settings. The display will also indicate various programming and diagnostic information.

### 11. Ready Indicator Light

Illuminates when the oven has finished preheating.

### 12. Up and Down Arrows

Used to increase or decrease set time, including cooking, holding and probe temperature settings.

### 13. Start Key

Used to initiate a selected mode sequence when *pressed and released*. You may stop any mode of operation by *pressing and holding* the Start Key until you hear a 2-second beep.

### 14. Green Indicator Lights

Located within each function key, the green light functions as an operator prompt indicating additional operator action is required and also identifies current mode of operation.

### 15. Amber Indicator Lights

Located below the Cook, Time, Probe and Hold Keys, these indicators will illuminate to identify the current mode of operation and allows the operator to identify the information currently shown in the LED display.

### 16. Preset Program Keys

Provides memory storage and operation of up to eight operator set cooking programs for specific products (A thru H). I enables locking abilities.

### 17. Cancel Key

Used to erase a program from memory storage.

## IMPORTANT

Do not use the oven if the controls are not properly functioning. Refer to the Troubleshooting Guide located in this manual or call an authorized service technician.

## GENERAL OPERATION - DELUXE CONTROL OVENS

### OPERATING FEATURES & FUNCTIONS

#### To stop an operation at any time :

Press and hold the START Key until the control beeps for two seconds, indicating the operation has been cancelled. The oven will remain in a power-on state.

#### To turn oven control panel off:

Press and hold the ON/OFF Key until the oven beeps. The ON/OFF indicator light will go out.

#### Door open indicator:

Display will flash “door” and a triple beep will alert the user. Press ON/OFF key to acknowledge error and disable triple beep.

#### Door lock:

Whenever the oven is in the COOK mode or HOLD mode prior to set time timing down to 0, the door will lock 5 seconds after the door is closed.

#### Door Lock Time

When in a preheat mode, pressing the HOLD key while the hold temperature is displayed will toggle to the door lock time.

#### Door lock override

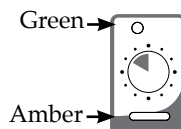
When the door lock is engaged, press and hold the COOK and the HOLD buttons simultaneously for 5 seconds. The door lock will disengage for 5 seconds to allow the user to open the door. The door lock will reengage 5 seconds after the door is closed.

#### Arrow Keys:

*Cook, Hold and Probe* Temperature, and the *Time* setting can be adjusted by pressing the *Arrow* keys. Pressing and releasing the *Arrow* key will change settings in increments of one. To change a setting more rapidly, press and hold the *Arrow* key. Once the setting reaches a number divisible by 10, it will begin to increase in increments of 10.

#### Green and Amber Indicators:

Each program key includes a green light which indicates a requirement for additional programming by the operator or the current operational state of the oven.



The COOK, TIME, PROBE, and HOLD keys include an amber indicator light to identify the information being displayed.

#### Power Fail Detect:

If the power were to fail for any reason while heating, the control will retain, in memory, the programmed operating conditions. When power is restored, the control will resume operating from the point where it was interrupted and the ON/OFF indicator light will flash, indicating that such an event did occur. The operator can acknowledge the power failure by pressing the ON/OFF key. Pressing the key will display the amount of time that the power has been off. The control will stop counting the amount of time the power has been off when it has been off for more than 24 hours.

**NOTE:** *If such an event has occurred, it is strongly recommended that you ensure the food is safe for consumption according to local health regulations.*

#### To set date and time:

All oven cavities must be turned OFF.

**To set Time (HH:mm)** - press and hold “A” Key for three seconds. Press UP/Down Arrow Key to set Time.

**To set Year** - press and hold “B” Key for three seconds. Press UP/Down Arrow Key to set Year.

**To set month and day (MM.dd)** = press “C” Key for three seconds. Press UP/Down Arrow Key to set Month and Day.

### OPERATING FEATURES & FUNCTIONS

#### Display High/Low Probe Temperatures:

To observe the recorded maximum or minimum probe temperature when cooking by probe, press the following keys while the probe remains in the product:

**Highest Temperature:** Press PROBE Key and UP ARROW Key at same time.

**Lowest Temperature:** Press PROBE Key and DOWN ARROW Key at same time.

#### Probe Usage:

When the oven probe remains inserted in the probe bracket, the LED temperature display will indicate the ambient air temperature inside the oven. To use the probe for cooking remove it from the bracket and wipe the full length of the metal probe with a disposable alcohol pad to clean and sanitize before using.

Only the tip of the probe senses the internal product temperature; therefore, it is important the tip be placed correctly in the product for internal temperature accuracy. Push the probe tip halfway into the product, positioning the tip at the center of the food mass. When inserting the probe into solid foods such as meat roast or poultry breasts, push the probe in from a straight downward position or in from the side to the center position. If placing into a semi-liquid or liquid product, the probe cable must be secured to keep the probe positioned properly. Do not let the probe tip touch the edges, bottom or side of a container. Tape the probe cable to the lip or edge of the container.

**NOTE:** When cooking by probe, insert the probe into the raw product after the oven has been preheated.

**WAIT ONE FULL MINUTE** to allow the probe temperature to decrease to the internal temperature of the product. Press the start button to begin the cooking process after this probe temperature adjustment period. A false probe reading of the internal product temperature will cause the oven to default to a holding temperature.

#### Probe Calibration:

1. To verify product probe calibration, place the probe in a glass of ice water.
2. After allowing the temperature to settle, press the probe key for five (5) seconds. Compare reading against 32°F (0°C).
3. If calibration is required, the unit must be in the power up hold mode. From the off state turn the unit on. The unit will begin to operate in the power up hold mode, press the probe key for eight (8) seconds until the unit beeps twice and a temperature is displayed. Adjust the probe offset temperature by pressing the up or down arrows to increase or decrease the temperature. Repeat step 2 to verify.
4. Repeat steps 1 and 2 to verify the probe calibration as necessary.

#### Sous Vide Cooking:

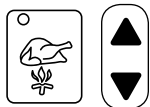
With the oven in a preheat mode, press and hold the probe button. After 5 seconds, it will display "SouS" if in sous-vide mode, or "rE9" if in a regular probe mode. If changes are desired, continue holding the probe button for an addition three seconds which will toggle the option.

## GENERAL OPERATION - DELUXE CONTROL OVENS

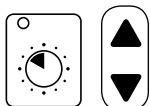
### Cook/Hold/Smoke Instructions



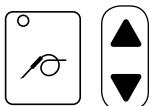
*Press and release control ON/OFF key.* The oven will beep for one second and power to the unit will be indicated by an illuminated green indicator light located in the upper left corner of the ON/OFF key. The oven will begin operating in the hold mode. The amber HOLD indicator will be illuminated and the last set hold temperature will be displayed.



*To set Cook temperature* — Press COOK Key. Oven preheat indicator will illuminate and the last set cooking temperature is displayed. To change the cook temperature, press the UP or DOWN ARROW Keys.



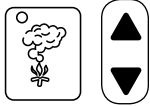
*If cooking by time* — press the TIME Key. The green TIME indicator will illuminate and the last set cooking time will be displayed. To change the set time, press the UP or DOWN ARROW Key. The display will alternate between the set temperature and the elapsed time.



*If cooking by probe* — press the PROBE Key. The green PROBE indicator will illuminate and the last set internal product temperature will be displayed. To change the set temperature, press the UP or DOWN ARROW Key. The display will alternate between the set temperature, the elapsed time, and the probe temperature.



*To set Hold temperature* — Press the HOLD Key. The green cook indicator light will remain illuminated. To change the hold temperature, press the UP or DOWN ARROW Key. The display will alternate between the set hold temperature and the amount of time the product has been in the hold mode. Oven will remain in the HOLD mode until the ON/OFF key is pressed.

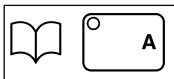


*To set Smoke time (hot smoke)* — Press SMOKER Key. To set the smoke time desired, use UP or DOWN ARROW key. The last set time will be displayed. *See following page for additional Smoking Procedures.*



*Press START key to begin cooking cycle.*

### To Cook/Hold/Smoke using Preset Menu Keys



*Press Desired PRESET Key (A through H).* PRESET Keys with stored cooking programs will have green indicator illuminated. The oven will automatically enter preheat mode. Oven will beep periodically when it has reached a preheat ready state, and both the Ready and Start indicator lights will flash. To program a preset menu key, see **Programming a Preset** in this manual.



*Press START key to begin cooking cycle.*

## CAUTION

TO MAINTAIN SAFE TEMPERATURE LEVELS, COLD FOOD FOR RETHERMALIZATION OR REHEATING MUST NEVER BE ADDED TO THE OVEN WHILE HOT FOODS ARE BEING HELD.

# OPERATION

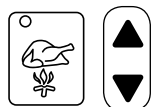
## GENERAL OPERATION - DELUXE CONTROL OVENS

### Programming a Preset

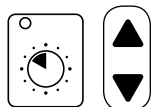


Select the product to be programmed and begin programming with the oven control power OFF.

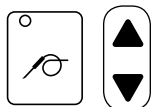
**Press and release control ON/OFF key.** The oven will beep for one second and power to the unit will be indicated by an illuminated green indicator light located in the upper left corner of the ON/OFF key. The oven will begin operating in the hold mode. The amber HOLD indicator will be illuminated and the last set hold temperature will be displayed.



**To set Cook temperature** — Press COOK Key. Oven preheat indicator will illuminate and the last set cooking temperature is displayed. To change the cook temperature, press the UP or DOWN ARROW Keys.



**If cooking by time** — press the TIME Key. The green TIME indicator will illuminate and the last set cooking time will be displayed. To change the set time, press the UP or DOWN ARROW Key. The display will alternate between the set temperature and the elapsed time.



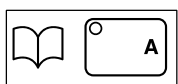
**If cooking by probe** — press the PROBE Key. The green PROBE indicator will illuminate and the last set internal product temperature will be displayed. To change the set temperature, press the UP or DOWN ARROW Key. The display will alternate between the set temperature, the elapsed time, and the probe temperature.



**To set Hold temperature** — Press the HOLD Key. The green cook indicator light will remain illuminated. To change the hold temperature, press the UP or DOWN ARROW Key. The display will alternate between the set hold temperature and the amount of time the product has been in the hold mode. Oven will remain in the HOLD mode until the ON/OFF key is pressed.



**To set Smoke time** — Press SMOKER Key. To set the smoke time desired, use UP or DOWN ARROW key. The last set time will be displayed.



Select a letter code for the product programmed by the previous steps. Press and hold the selected PRESET key for two seconds. When the preset has been saved, you will hear a one second beep and the preset light will illuminate.

**Note:** Only one preset can be programmed at a time. If programming an additional preset is desired, the unit must be started and stopped either by cycling the power to the cavity or by pressing the START/STOP key. The last PRESET Key used will be the oven cooking run sequence for the next product to be programmed. Settings can be manually changed for the next product and an alternate pre-programmed letter key selected.

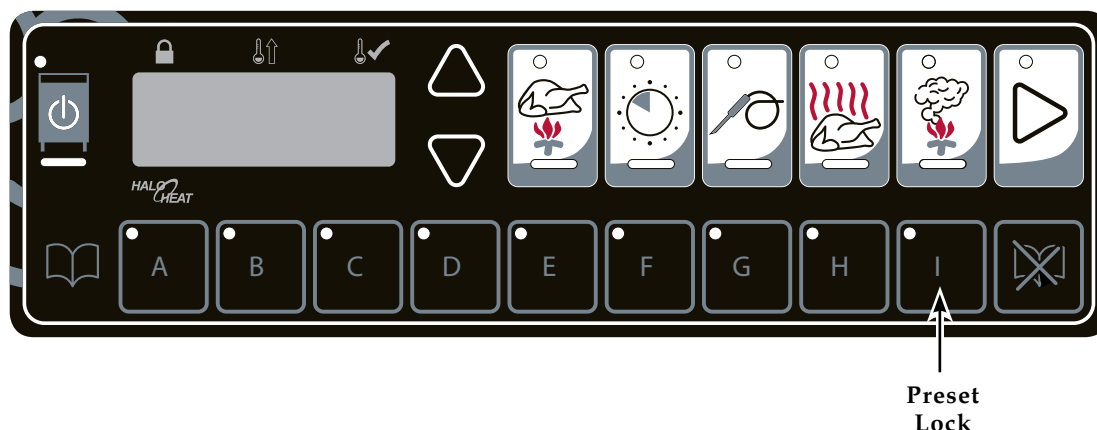
### Erasing a Preset

To erase a program, the oven must be in either the power-up hold mode or in the preheat mode. The oven cannot be running a PRESET Menu program.

When the oven is in the power-up hold mode or in the preheat mode, press and hold the CANCEL Key and then the appropriate letter PRESET Key to be erased for two seconds. When the preset has been erased the oven will beep for one second.

**IMPORTANT** - After programming a specific product into memory in a programmable preset key, it is very important to make a written permanent record of the product and the program letter assigned. Menu card (PE-23384) is provided for this purpose.

## GENERAL OPERATION - DELUXE CONTROL OVENS



### PRESET Keys Lock and Unlock

PRESET Keys A through H can be locked in order to prevent storing, altering or erasing a program.

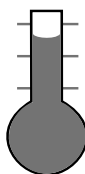
To lock the PRESET Keys, press and hold the "I" Key until the oven beeps. Release the "I" key. The green indicator on the "I" key will illuminate. Oven PRESET Keys A through H are now locked.

*Note:* Only the oven PRESET keys A through H are affected by this lock-out in order to also allow the oven to be used with the unprogrammed Cook, Probe, or Hold modes.

To unlock the PRESET Keys, press and hold the CANCEL Key along with the "I" Key for two seconds until the "I" key light no longer illuminates. Release all keys. The oven preset keys are now unlocked.

### Fahrenheit or Celsius Selection

With the control in the *off mode*, **press and hold** the UP ARROW Key until the display shows the current selection. Press the up or down buttons to toggle between the two options. After each change the button must be released. The display must clear before the procedure can be repeated.



### Control Panel Lock and Unlock

The control panel can be locked at any time in order to prevent inadvertent or accidental setting changes.

To lock the control panel, **press and hold** the UP ARROW Key and then press the ON/OFF Key. You will hear a brief beep and the panel lock indicator will illuminate. Release all keys. The oven's control panel is now locked.

*Note:* The control panel is now fully locked with the exception of the ON/OFF Key and ARROW keys. You will be unable to turn the oven control off at this point.

To unlock the control panel, **press and hold** the DOWN ARROW Key and then press the ON/OFF Key. You will hear three beeps and the panel lock indicator will extinguish. Release all keys. The panel is now unlocked and ready for normal use.

### Beeper Volume Selection

With the control in the *off mode*, **press and hold** the DOWN ARROW Key until the display shows the current control volume. Press the UP or DOWN ARROW Key to cycle through the four options (0 = Off, 1 = Low, 2 = Mid, 3 = High).



OPERATION

GENERAL OPERATION - DELUXE CONTROL OVENS

HACCP Documentation, Data Logger - Optional

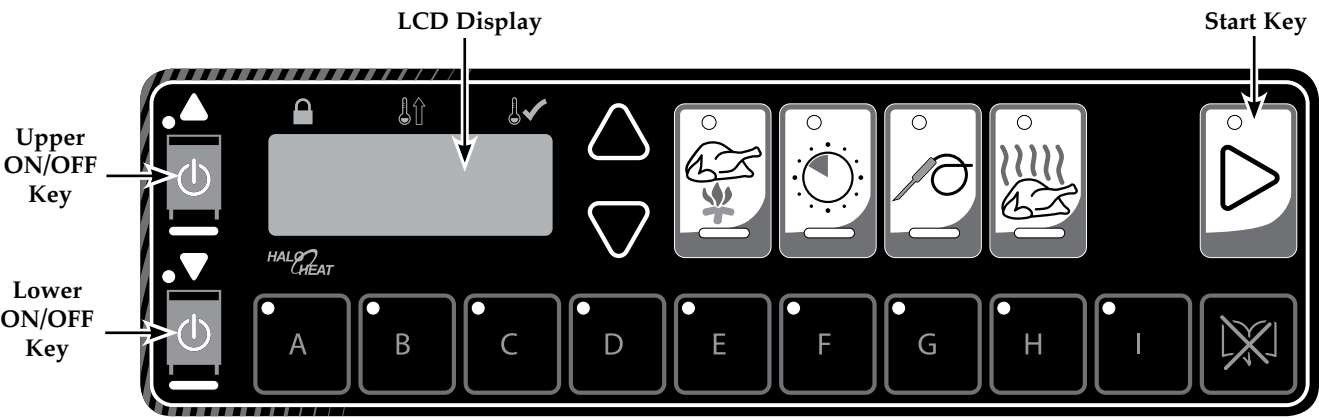
This oven meets the requirements of established HACCP criteria by providing automated sampling, record keeping, set-point validation, recipe used, dates and time. This data is retained for the last 30 days. This information can be viewed on screen or downloaded to a USB drive and then copied to your computer. The file format is a comma-separated variable (\*.csv), that is easily opened using a spreadsheet package.

To download the data collected:

- 1. All oven cavities must be turned OFF.
- 2. It is recommended that a completely empty USB flash drive is used. Remove the cap of the USB port located on the right side of the control panel and insert the USB flash drive. Display will show "Usb". If display does not show "Usb", try again with another flash drive device or call Alto-Shaam Service.
- 3. Press and hold the START Key until display shows "≡ XYZ". The number at the far right is the percentage of the download completed. The START Key indicator light will flash while the download is in process. When display shows "≡ 100", the download is complete.
- 4. Remove the USB flash drive and replace the cap on the USB port. When the USB is removed, the oven will beep for 1-second, acknowledging the removal.

A26						
1	Unit Serial Number	01:10:04				
2	Software Version:	0.12				
3	Control Personality:	0				
4	Start Time	7/26/2012 10:33				
5	Cavity Upper					
6	Program Name	Preset A				
7	Cook Set Temperature (°F)	250				
8	Cooking by:	Time				
9	Cook Time	2:24				
10	Hold Set Temperature (°F)	150				
11						
12						
13						
14	Date Time Mode Cavity Set-Temperature (°F) Cavity (°F) Probe (°F) Additional Information					
15	7/26/2012 10:33:57 Preheat 250 250 146					
16	7/26/2012 10:37:29 Cook 250 249 146					
17	7/26/2012 10:38:57 Cook 250 251 146					
18	7/26/2012 10:43:57 Cook 250 250 146					
19	7/26/2012 10:47:29 Hold 150 150 146					
20	7/26/2012 10:48:57 Hold 150 151 146					
21						
22						
23						

HACCP Data Sample



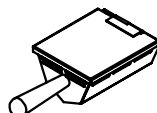
## GENERAL OPERATION - DELUXE CONTROL OVENS

### Preparation

Adjust the inside door vents per the individual cooking procedure selected. Always keep door vents closed when cooking with the smoking function. Insert drip pan on the bottom of the oven cavity.

### Wood Chips

Soak one full tray of wood chips in water for 5 to 10 minutes. Shake off excess water, and place the moistened chips in the wood chip tray of the smoker oven. Replace the container in the oven.



## WARNING



THE USE OF IMPROPER MATERIALS FOR THE SMOKING FUNCTION COULD RESULT IN DAMAGE, HAZARD, EQUIPMENT FAILURE OR COULD REDUCE THE OVERALL LIFE OF THE OVEN.

DO NOT USE SAWDUST FOR SMOKING.

DO NOT USE WOOD CHIPS SMALLER THAN THUMBNAIL SIZE.

### Hot Smoke Procedure



Press and release power switch ON/OFF Control Key.



Press and set COOK thermostat to required cooking temperature.



Press and set TIME or PROBE.



Press and set HOLD thermostat to required holding temperature.



The Oven is automatically programmed to preheat to the set cooking temperature. The oven will produce an audible signal when fully preheated.

Prepare product for cooking.  
Load product on shelves.

#### To Set Smoking Time



Press the SMOKER Key.

Press the UP and DOWN ARROW KEYS to select the smoke time in minutes.



Press START.

*Note: The smoking timer activates the heating element located within the wood chip container when in either a cook or hold mode. The smoke element will not turn on during preheat or ready modes. A full wood chip container will produce smoke for a period of approximately 1 hour, even though the timer can go past one hour.*

*For maximum product tenderizing and to reduce labor during peak preparation hours, products can be cooked and held overnight.*

*These instructions are basic operational guidelines only. For complete instructions, see the HALO HEAT Guide to Low Temperature Cooking and Holding provided with the oven.*

### Cold Smoke Procedure

#### To Enter Cold Smoke Mode



Press and release power switch ON/OFF Control Key.



Press and hold the SMOKER Key for a period of 3 seconds.

#### To Set Cold Smoke Holding Temperature

The temperature will default to the last smoke holding temperature set by the user. The holding temperature range is 14°F to 205°F (-10°C to 96°C).



To increase this default temperature, press the HOLD KEY and press the UP ARROW to set a higher default temperature.

#### To Set Smoking Verification Temperature (IF DESIRED)



Press the PROBE KEY.

Press the UP and DOWN ARROW KEYS to select the verification temperature. The probe range is 14°F to 195°F (-10°C to 91°C).

This will incorporate the probe into the cold-smoking process and the control will alarm if the temperature exceeds the probe set point.

#### To Set Smoking Time



Press the SMOKER Key.

Press the UP and DOWN ARROW KEYS to select the smoke time in minutes.

Prepare product for smoking.

Place stainless steel tray filled with ice on shelf above the smoker tray.



Load product on shelves.

Press START.

Taste preference	Minimum Smoking time
Light Smoke Flavor	10 min.
Medium Smoke Flavor	30 min.
Heavy Smoke Flavor	40 min.
Very Heavy Smoke Flavor	60 min.
Extra Heavy Smoke Flavor	80 min.

OPERATION

GENERAL OPERATION - DELUXE CONTROL OVENS

SMOKING PROCEDURE OPTIONS

Many of the procedures listed in the front section of this guide can be adapted to the Alto-Shaam Smoker.

- 1. Follow the load capacities for the 750, 1000 and 1200 series ovens.
- 2. Follow the cooking and holding temperatures and times listed.
- 3. Set the Smoking Timer for the amount of smoke flavor desired.

A. ONE-STEP COOKING:

After the COOK time is complete and the minimum number of hours in the HOLD cycle have elapsed, the product may remain ON HOLD until serving time.

B. TWO-STEP COOKING:

Remove product from the oven after the minimum number of hours in the HOLD cycle. Chill product quickly and prepare for refrigerated storage. Refrigerated product can be sauced and finished on a char-broiler, in a convection oven, a combination oven/steamer or in a salamander for a la carte service. This process takes between 8 and 15 minutes and insures a tender, juicy and fresh tasting product. When using cook/chill processing techniques, products have an extended storage life of 5 days which includes the day of preparation and the day of service.

SMOKING TIMES	
It is recommended the operator be familiar with the taste preferences of the area. Initially experimenting with a minimal amount of smoking time is suggested.	
LIGHT SMOKE FLAVOR .....	10 MINUTES
MEDIUM SMOKE FLAVOR .....	30 MINUTES
HEAVY SMOKE FLAVOR .....	40 MINUTES
VERY HEAVY SMOKE FLAVOR .....	60 MINUTES*
EXTRA HEAVY SMOKE FLAVOR .....	120 MINUTES*
*FOR 60 MINUTES OR MORE: LOAD WOOD CHIP CONTAINER TWICE AND ACTIVATE SMOKING TIMER TWICE.	

DETERMINING IF PRODUCT IS SUFFICIENTLY COOKED

- 1. Insert a thermometer into the center of the product to determine if the correct internal temperature has been reached.

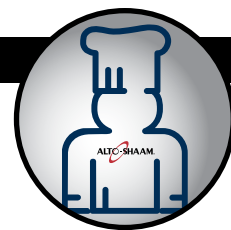
RED MEAT:

- RARE: 130° to 135°F (54° to 57°C)
- MEDIUM: 140° to 145°F (60° to 63°C)
- WELL: 155° to 160°F (66° to 71°C)


- 2. When following the procedures in the individual product cooking instructions, additional cooking time should not be necessary. If, however, the required internal product temperature has not been reached after the product has remained in the HOLD cycle for the one hour minimum time period, additional cooking time may be added. Use the same COOK temperature set for the original cooking cycle until the correct internal temperature has been reached.

INTERNAL PRODUCT TEMPERATURE	TIME* IN HOLD CYCLE REQUIRED BY FOOD CODE
130°F (54°C)	1 HOUR, 52 MINUTES
131°F (55°C)	1 HOUR, 29 MINUTES
133°F (56°C)	56 MINUTES
135°F (57°C)	36 MINUTES
136°F (58°C)	28 MINUTES
138°F (59°C)	18 MINUTES
140°F (60°C)	12 MINUTES
142°F (61°C)	8 MINUTES
144°F (62°C)	5 MINUTES
145°F (63°C)	4 MINUTES
147°F (64°C)	2 MINUTES, 14 SECONDS
149°F (65°C)	1 MINUTES, 25 SECONDS
151°F (66°C)	54 SECONDS
153°F (67°C)	34 SECONDS
155°F (68°C)	22 SECONDS
157°F (69°C)	14 SECONDS
158°F (70°C)	0 SECONDS
*HOLDING TIME MAY INCLUDE POST-OVEN HEAT RISE	

## GENERAL OPERATION - DELUXE CONTROL OVENS



### CHEF OPERATING TIPS

1. For cooking specific products, refer to individual cook and hold instructions.
2. When cooking at 250°F (121°C), it takes approximately one hour for the cooking temperature to decrease to the selected holding temperature. During this one hour time period, the product will continue to cook.
3. The cooking times in this guide are based on meat taken directly from a refrigerated temperature of 38° to 40°F (3.3° to 4.4°C), and placed in a preheated oven. Adjustments must be made for cooking products at other than refrigerated temperatures.
4. Place the curved edge of the shelf toward the back of the oven.
5. Adjust the inside door vents as indicated in the individual cooking procedure selected.
6. It is recommended the oven door remain closed during the cooking cycle. Opening the door will only increase the length of time necessary to cook the product.
7. Puncturing an item with any sharp instrument may introduce bacteria inside the product. Avoid using a fork to handle products, and always use standard sanitary methods when handling any food item.
8. Use a thermometer to check the internal temperature of a product. Be certain to sanitize the thermometer before each use.
9. Aged meat will cook faster, shrink more, and cannot be held as long as fresh meat. Because of the tenderizing capabilities of the oven, aged meat or tenderizing agents such as M.S.G. are not necessary, and are not recommended.
10. When cooking full loads, never cook below the second shelf spacing from the bottom of the oven compartment.
11. Fully clean the oven interior, drip pan, shelves, and side racks on a daily basis.
12. Since there is no air movement inside the Halo Heat® low temperature cooking and holding oven, condensation will form on the inside of the door during operation and may leak out of the oven door vents. This is a normal operating condition, however; any condensation spilling on the floor should be periodically wiped as a safety precaution. There is an External Drip Tray included as standard with most ovens.
13. Insert drip pan directly on the bottom surface of the oven compartment.
14. Drip pan overflow is a condition caused by cooking some cuts of beef to an internal temperature in excess of 130°F (54°C). The External Drip Tray will help alleviate some of this overflow problem. There is also an extra large drip pan available as an option for the 1000-TH series ovens.
15. Overflow may also be caused by overloading the oven compartment. **DO NOT OVERLOAD THE OVEN.** Follow the recommended load capacities listed in each individual procedure.
16. For maximum product tenderizing and to reduce labor during peak preparation hours, overnight cook and hold is highly recommended for many products. Refer to individual cooking instructions. 
17. As a guide when cooking rare beef roast in the 300-TH/III counter top oven, we recommend:
  - Food probe should be inserted in the food on the lowest shelf
  - Set cook temperature to 250°F (121°C)
  - Set probe temperature to 90°F (32°C)
  - Set hold temperature to 140°F (60°C) or 135°F (57°C)

### NEED SOME HELP?

The Alto-Shaam staff includes corporate executive chefs who welcome questions. You are invited to contact anyone on our staff by phone (800.558.8744) or e-mail through the Contact Us section of our web site ([www.alto-shaam.com](http://www.alto-shaam.com)) for help with any cook and hold procedure.

# FOOD HOLDING AND SANITATION

## FOOD HOLDING AND SANITATION

### DETERMINING IF PRODUCT IS SUFFICIENTLY COOKED

1. Insert a thermometer into the center of the product to determine if the correct internal temperature has been reached.

#### RED MEAT:

RARE: 130° to 135°F (54° to 57°C)

MEDIUM: 140° to 145°F (60° to 63°C)

WELL: 155° to 160°F (66° to 71°C)

2. When following the procedures in the individual product cooking instructions, additional cooking time should not be necessary. If, however, the required internal product temperature has not been reached after the product has remained in the HOLD cycle for the one hour minimum time period, additional cooking time may be added. Use the same COOK temperature set for the original cooking cycle until the correct internal temperature has been reached.

### REHEATING

1. Any over production must be removed from the oven, wrapped, rapidly chilled, and refrigerated.
2. Product can be removed from refrigerator, returned to the oven, and reheated the next day.
3. Products must be reheated at a temperature range of 250° to 275°F (121° to 135°C). Refer to individual cooking instructions for the correct thermostat setting for the product being reheated.
4. Length of time necessary to reheat a product depends on the type of product and the quantity to be reheated. Time should be based on internal product temperature. Use a pocket thermometer to determine the internal product temperature of the reheated product.

United States food code requirements indicate cooked foods that have been cooled, followed by reheating for hot food holding, must be reheated to 165°F (74°C). The temperature of 165°F (74°C) must be maintained for a period 15 seconds.

Always follow federal and local health (hygiene) codes for the time and internal temperature required for reheating products.

In the United States, FDA food code requires products such as red meat to remain in “HOLD” for a specified time period. This holding time requirement is based on the internal product temperature desired for the finished product and includes the one hour time period while the oven decreases from the cooking temperature to the holding temperature and the product continues to cook.

INTERNAL PRODUCT TEMPERATURE	TIME* IN HOLD CYCLE REQUIRED BY FOOD CODE
130°F (54°C)	1 HOUR, 52 MINUTES
131°F (55°C)	1 HOUR, 29 MINUTES
133°F (56°C)	56 MINUTES
135°F (57°C)	36 MINUTES
136°F (58°C)	28 MINUTES
138°F (59°C)	18 MINUTES
140°F (60°C)	12 MINUTES
142°F (61°C)	8 MINUTES
144°F (62°C)	5 MINUTES
145°F (63°C)	4 MINUTES
147°F (64°C)	2 MINUTES, 14 SECONDS
149°F (65°C)	1 MINUTES, 25 SECONDS
151°F (66°C)	54 SECONDS
153°F (67°C)	34 SECONDS
155°F (68°C)	22 SECONDS
157°F (69°C)	14 SECONDS
158°F (70°C)	0 SECONDS
*HOLDING TIME MAY INCLUDE POST-OVEN HEAT RISE	

## FOOD HOLDING AND SANITATION

### FOOD HOLDING - FUNCTION & VALUE

In the previous sections, cooking procedures in the Halo Heat Low Temperature Cooking and Holding Oven have been emphasized. If practical to the individual food service operation, these ovens can also be used without the cooking function to hold foods at proper serving temperatures. Individual holding cabinets can also be used to accomplish this function.

Food production in most food service facilities is accomplished in a variety of different cooking equipment. Food quality can be easily lost between the time a product is removed from an oven and the time of direct service. Regardless of the method of preparation, proper handling of food within this time period is of critical importance to the food service operator. Halo Heat hot food holding equipment is able to support any type of food preparation by extending the longest possible holding life for the widest variety of products.

For maximum efficiency, hot food holding equipment should be selected on the basis of the full range of functions this equipment can provide to the individual operation. For example, dough proofing, bulk food holding for buffet service or other situations and the transportation of hot foods are some of the major functions of these cabinets for multipurpose utility. When properly planned, Halo Heat holding equipment can be a time management aid, support the food service operation by extending preparation times outside of peak preparation hours, and provide a quality product in prolonged holding situations.

Consult an Alto-Shaam representative for information on compatible holding equipment or for recommendation on full systems tailored to meet specific requirements.

### CAUTION

TO MAINTAIN SAFE TEMPERATURE LEVELS, COLD FOOD FOR RETHERMALIZATION OR REHEATING MUST NEVER BE ADDED TO THE OVEN WHILE HOT FOODS ARE BEING HELD.

# FOOD HOLDING AND SANITATION

## FOOD HOLDING AND SANITATION

### GENERAL HOLDING GUIDELINES

Chefs, cooks and other specialized food service personnel employ varied methods of cooking. Proper holding temperatures for a specific food product must be based on the moisture content of the product, product density, volume, and proper serving temperatures. Safe holding temperatures must also be correlated with palatability in determining the length of holding time for a specific product.

Halo Heat maintains the maximum amount of product moisture content without the addition of water, water vapor, or steam. Maintaining maximum natural product moisture preserves the natural flavor of the product and provides a more genuine taste. In addition to product moisture retention, the gentle properties of Halo Heat maintain a consistent temperature throughout the cabinet without the necessity of a heat distribution fan, thereby preventing further moisture loss due to evaporation or dehydration.

In an enclosed holding environment, too much moisture content is a condition which can be relieved. A product achieving extremely high temperatures in preparation must be allowed to decrease in temperature before being placed in a controlled holding atmosphere. If the product is not allowed to decrease in temperature, excessive condensation will form increasing the moisture content on the outside of the product. To preserve the safety and quality of freshly cooked foods however, a maximum of 1 to 2 minutes must be the only time period allowed for the initial heat to be released from the product.

Most Halo Heat holding equipment is provided with a thermostat control between 60° and 200°F (16° to 93°C). If the unit is equipped with vents, close the vents for moist holding and open the vents for crisp holding.

HOLDING TEMPERATURE RANGE		
MEAT	FAHRENHEIT	CELSIUS
BEEF ROAST — Rare	130°F	54°C
BEEF ROAST — Med/Well Done	155°F	68°C
BEEF BRISKET	160° — 175°F	71° — 79°C
CORN BEEF	160° — 175°F	71° — 79°C
PASTRAMI	160° — 175°F	71° — 79°C
PRIME RIB — Rare	130°F	54°C
STEAKS — Broiled/Fried	140° — 160°F	60° — 71°C
RIBS — Beef or Pork	160°F	71°C
VEAL	160° — 175°F	71° — 79°C
HAM	160° — 175°F	71° — 79°C
PORK	160° — 175°F	71° — 79°C
LAMB	160° — 175°F	71° — 79°C
POULTRY		
CHICKEN — Fried/Baked	160° — 175°F	71° — 79°C
DUCK	160° — 175°F	71° — 79°C
TURKEY	160° — 175°F	71° — 79°C
GENERAL	160° — 175°F	71° — 79°C
FISH/SEAFOOD		
FISH — Baked/Fried	160° — 175°F	71° — 79°C
LOBSTER	160° — 175°F	71° — 79°C
SHRIMP — Fried	160° — 175°F	71° — 79°C
BAKED GOODS		
BREADS/ROLLS	120° — 140°F	49° — 60°C
MISCELLANEOUS		
CASSEROLES	160° — 175°F	71° — 79°C
DOUGH — Proofing	80° — 100°F	27° — 38°C
EGGS —Fried	150° — 160°F	66° — 71°C
FROZEN ENTREES	160° — 175°F	71° — 79°C
HORS D'OEUVRES	160° — 180°F	71° — 82°C
PASTA	160° — 180°F	71° — 82°C
PIZZA	160° — 180°F	71° — 82°C
POTATOES	180°F	82°C
PLATED MEALS	140° — 165°F	60° — 74°C
SAUCES	140° — 200°F	60° — 93°C
SOUP	140° — 200°F	60° — 93°C
VEGETABLES	160° — 175°F	71° — 79°C
THE HOLDING TEMPERATURES LISTED ARE SUGGESTED GUIDELINES ONLY. ALL FOOD HOLDING SHOULD BE BASED ON INTERNAL PRODUCT TEMPERATURES. ALWAYS FOLLOW LOCAL HEALTH (HYGIENE) REGULATIONS FOR ALL INTERNAL TEMPERATURE REQUIREMENTS.		

## FOOD HOLDING AND SANITATION

Food flavor and aroma are usually so closely related that it is difficult, if not impossible, to separate them. There is also an important, inseparable relationship between cleanliness and food flavor. Cleanliness, top operating efficiency, and appearance of equipment contribute considerably to savory, appetizing foods. Good equipment that is kept clean, works better and lasts longer.

Most food imparts its own particular aroma and many foods also absorb existing odors. Unfortunately, during this absorption there is not distinction between GOOD and BAD odors. The majority of objectionable flavors and odors troubling food service operations are caused by bacteria growth. Sourness, rancidity, mustiness, stale or other OFF flavors are usually the result of germ activity.

The easiest way to insure full, natural food flavor is through comprehensive cleanliness. This means good control of both visible soil (dirt) and invisible soil (germs). A thorough approach to sanitation will provide essential cleanliness. It will assure an attractive appearance of equipment, along with maximum efficiency and utility. More importantly, a good sanitation program provides one of the key elements in the prevention of food-borne illnesses.

A controlled holding environment for prepared foods is just one of the important factors involved in the prevention of food-borne illnesses. Temperature monitoring and control during receiving, storage, preparation, and the service of foods are of equal importance.

The most accurate method of measuring safe temperatures of both hot and cold foods is by internal product temperature. A quality thermometer is an effective tool for this purpose, and should be routinely used on all products that require holding at a specific temperature.

A comprehensive sanitation program should focus on the training of staff in basic sanitation procedures. This includes personal hygiene, proper handling of raw foods, cooking to a safe internal product temperature, and the routine monitoring of internal temperatures from receiving through service.

Most food-borne illnesses can be prevented through proper temperature control and a comprehensive program of sanitation. Both these factors are important to build quality service as the foundation of customer satisfaction. Safe food handling practices to prevent food-borne illness is of critical importance to the health and safety of your customers.

HACCP, an acronym for Hazard Analysis (at) Critical Control Points, is a quality control program of operating procedures to assure food integrity, quality, and safety. Taking steps necessary to augment food safety practices is both cost effective and relatively simple. While HACCP guidelines go far beyond the scope of this manual, additional information is available by contacting:

**CENTER FOR FOOD SAFETY AND APPLIED  
NUTRITION FOOD AND DRUG ADMINISTRATION  
1-888-SAFEFOOD**

INTERNAL FOOD PRODUCT TEMPERATURES		
HOT FOODS		
DANGER ZONE	40° TO 140°F	(4° TO 60°C)
CRITICAL ZONE	70° TO 120°F	(21° TO 49°C)
SAFE ZONE	140° TO 165°F	(60° TO 74°C)
COLD FOODS		
DANGER ZONE	ABOVE 40°F	(ABOVE 4°C)
SAFE ZONE	36° TO 40°F	(2° TO 4°C)
FROZEN FOODS		
DANGER ZONE	ABOVE 32°F	(ABOVE 0°C)
CRITICAL ZONE	0° TO 32°F	(-18° TO 0°C)
SAFE ZONE	0°F or below	(-18°C or below)

# FOOD HOLDING AND SANITATION

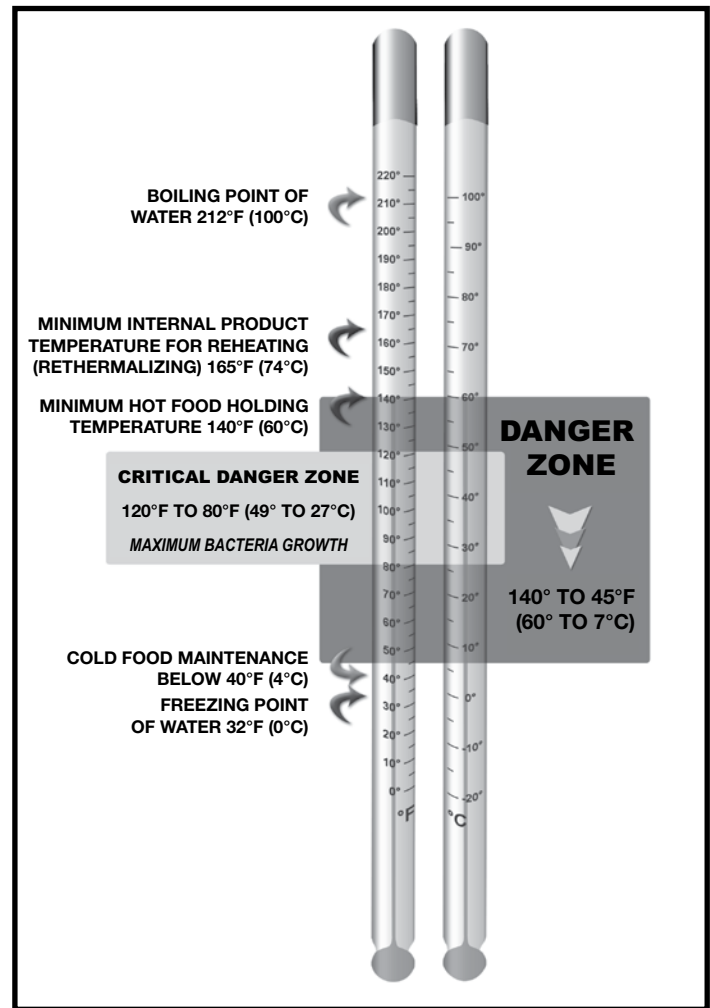
## FOOD HOLDING AND SANITATION

### FOOD SAFETY GUIDELINES

Safe food handling practices to prevent food-borne illness is of critical importance to the health and safety of your customers. HACCP, an acronym for Hazard Analysis (at) Critical Control Points, is a quality control program of operating procedures to assure food integrity, quality, and safety. Taking steps necessary to augment food safety practices are both cost effective and relatively simple. While HACCP guidelines go far beyond the scope of this booklet, additional information is available by contacting the USDA/FDA Food-borne Illness Education Information Center.

*All heated food must be maintained at 140°F to 150°F (60°C to 65°C) after being heated. Foods that have been heated followed by refrigerated storage must be reheated to a minimum of 165°F (74°C) to prevent bacteria growth.*

- All stored food items must be covered and placed in a cooler or freezer at a minimum height of 6-inches (152mm) above the floor.
- Employees serving food, preparing food, or washing utensils must wear an effective hair covering.
- Employees must wash their hands before serving or preparing food.
- Soap and towels must be provided at the hand-sink which must only be used for washing hands.
- No smoking or use of tobacco products is allowed in the food preparation or service area.
- All serving containers must be stored with food contact surfaces covered or in the down position.
- All utensils must be washed in a three-compartment sink and dipped in a final sanitation rinse. A pH test kit must be used to check the rinse water.
- Food preparation surfaces must not be used for the storage of non-food items.
- All cold food must be stored at or below 40°F (4°C).
- Frozen foods must not be thawed at room temperature nor in water. Use the cooler for thawing and thaw foods slowly.



### SUMMARY

In the United States, the Food and Drug Administration has a published Food Code as a reference guide for the prevention of food-borne illness in retail outlets such as restaurants, institutions and grocery stores. Provisions of this Food Code are compatible with the concept and terminology of Hazard Analysis (at) Critical Control Points (HACCP) and contains expanded provisions for food safety. The FDA publication, along with local codes, should be the final word with regard to all issues regarding food safety and sanitation in the U.S. For more information contact:

Center for Food Safety and Applied Nutrition  
Food and Drug Administration  
PHONE: 1-888-SAFEFOOD  
[www.foodsafety.gov](http://www.foodsafety.gov)

## CLEANING AND MAINTENANCE

### PROTECTING STAINLESS STEEL SURFACES



It is important to guard against corrosion in the care of stainless steel surfaces. Harsh, corrosive, or inappropriate chemicals can completely destroy the protective surface layer of stainless steel. Abrasive pads, steel wool, or metal implements will abrade surfaces causing damage to this protective coating and will eventually result in areas of corrosion. Even water, particularly hard water that contains high to moderate concentrations of chloride, will cause oxidation and pitting that result in rust and corrosion. In addition, many acidic foods spilled and left to remain on metal surfaces are contributing factors that will corrode surfaces.

Proper cleaning agents, materials, and methods are vital to maintaining the appearance and life of this appliance. Spilled foods should be removed and the area wiped as soon as possible but at the very least, a minimum of once a day. Always thoroughly rinse surfaces after using a cleaning agent and wipe standing water as quickly as possible after rinsing.

## DANGER

**DISCONNECT UNIT FROM POWER SOURCE BEFORE CLEANING OR SERVICING.**

### CLEANING AGENTS

Use non-abrasive cleaning products designed for use on stainless steel surfaces. Cleaning agents must be chloride-free compounds and must not contain quaternary salts. Never use hydrochloric acid (muriatic acid) on stainless steel surfaces. Always use the proper cleaning agent at the manufacturer's recommended strength. Contact your local cleaning supplier for product recommendations.

### CLEANING MATERIALS

The cleaning function can usually be accomplished with the proper cleaning agent and a soft, clean cloth. When more aggressive methods must be employed, use a non-abrasive scouring pad on difficult areas and make certain to scrub with the visible grain of surface metal to avoid surface scratches. Never use wire brushes, metal scouring pads, or scrapers to remove food residue.

## CAUTION

NO SCRAPERS

NO WIRE BRUSHES

NO STEEL PADS

**TO PROTECT STAINLESS STEEL SURFACES, COMPLETELY AVOID THE USE OF ABRASIVE CLEANING COMPOUNDS, CHLORIDE BASED CLEANERS, OR CLEANERS CONTAINING QUATERNARY SALTS. NEVER USE HYDROCHLORIC ACID (MURIATIC ACID) ON STAINLESS STEEL. NEVER USE WIRE BRUSHES, METAL SCOURING PADS OR SCRAPERS.**

### DAILY PRONG CLEANING

To ensure accurate internal product temperature readings the prongs on the removable probe must be cleaned daily.

1. Remove all food debris from prongs at the end of each production shift. Wipe the entire prong casing, and between each prong with a clean cloth and warm detergent solution.
2. Remove detergent by wiping with a cloth and clean rinse water.
3. Allow prongs to air dry before replacing detachable probe.



# CLEANING AND MAINTENANCE

## CLEANING AND MAINTENANCE

### EQUIPMENT CARE

Under normal circumstances, this oven should provide you with long and trouble-free service. There is no preventative maintenance required, however, the following Equipment Care Guide will maximize the potential life and trouble free operation of this oven.

The cleanliness and appearance of this equipment will contribute considerably to operating efficiency and savory, appetizing food. Good equipment that is kept clean works better and lasts longer.

### CLEAN DAILY

1. Disconnect unit from power source and let cool.
2. Remove all detachable items such as wire shelves, side racks, and drip pans. Clean these items separately.
3. Wipe the interior metal surfaces of the oven with a paper towel to remove loose food debris.
4. Clean the interior metal surfaces of the cabinet with a damp clean cloth or sponge and any good commercial detergent.



**NOTE:** Avoid the use of abrasive cleaning compounds, chloride-based cleaners, or cleaners containing quaternary salts. Never use hydrochloric acid (muriatic acid) on stainless steel.

5. Spray heavily soiled areas with a water soluble degreaser and let stand for 10 minutes, then remove soil with a plastic scouring pad.
6. Wipe control panel, door vents, door handles, and door gaskets thoroughly since these areas harbor food debris.
7. Rinse surfaces by wiping with sponge and clean warm water.
8. Remove excess water with sponge and wipe dry with a clean cloth or air dry. Leave doors open until interior is completely dry. Replace side racks and shelves.
9. Wipe door gaskets and control panel dry with a clean, soft cloth.
10. Interior can be wiped with a sanitizing solution after cleaning and rinsing. This solution must be approved for use on stainless steel food contact surfaces.

11. To help maintain the protective film coating on polished stainless steel, clean the exterior of the cabinet with a cleaner recommended for stainless steel surfaces. Spray the cleaning agent on a clean cloth and wipe with the grain of the stainless steel.

12. Clean any glass with a window cleaner.

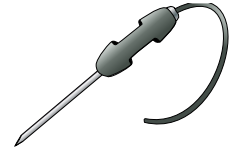
Always follow appropriate state or local health (hygiene) regulations regarding all applicable cleaning and sanitation requirements for equipment.

### CLEAN THE DOOR VENTS

Door vents need to be inspected and cleaned as required.

### CLEAN THE PROBES DAILY

Remove all food soil from probes. Wipe entire probe and cable assembly with warm detergent solution and a clean cloth. Remove detergent by wiping each probe and cable with clean rinse water and a cloth. Wipe probes and probe brackets with disposable alcohol pad or sanitizing solution recommended for food contact surfaces. Allow probe and cable to air dry in probe holding bracket.



### CHECK THE COOLING FAN IN THE OVEN CONTROL AREA

While the oven is warm, check that the cooling fan in the oven control area is functioning. The fan is located at the back of the unit, toward the top.

### CHECK OVERALL CONDITION OF OVEN ONCE A MONTH

Check the oven once a month for physical damage and loose screws. Correct any problems before they begin to interfere with the operation of the oven.

### DO NOT USE OVEN IF CONTROLS ARE NOT PROPERLY FUNCTIONING

Refer to the Troubleshooting Guide in the Operation and Care manual or call an authorized service technician.



## DANGER



**DISCONNECT UNIT FROM POWER SOURCE BEFORE CLEANING OR SERVICING.**



## DANGER

**AT NO TIME SHOULD THE INTERIOR OR EXTERIOR BE STEAM CLEANED, HOSED DOWN, OR FLOODED WITH WATER OR LIQUID SOLUTION OF ANY KIND. DO NOT USE WATER JET TO CLEAN.**

**SEVERE DAMAGE OR ELECTRICAL HAZARD COULD RESULT.**

**WARRANTY BECOMES VOID IF APPLIANCE IS FLOODED**

## PRODUCT INDEX

### **BEEF**

Beef Brisket .....	26
Beef Short Ribs .....	26
Beef Short Ribs, Braised .....	26
Beef Striploin .....	27
Prime Rib (#109) .....	27
Prime Rib, Special .....	27
Corned Beef .....	28
Ribeye Roll .....	28
Beef Round .....	28
Beef Round, CAFETERIA/STEAMSHIP .....	29
Tenderloin .....	29
Veal Loin .....	29

### **LAMB**

Lamb, Leg .....	30
Lamb Racks (Frenched) .....	30
Lamb Shanks .....	30

### **PORK**

Pork Leg, Fresh .....	31
Ham, Cured & Smoked .....	31
Pork Chops .....	31
Pork Loin .....	32
Pork Shoulder .....	32
Pork Ribs .....	32
Pig, Whole .....	33

### **PROCESSED MEATS**

Sausage .....	33
---------------	----

### **POULTRY**

Chicken, Pieces & Halves .....	34
Chicken, Whole .....	34
Chicken, Fried TWO-STEP METHOD .....	35
Cornish Hens .....	35
Duck, Whole .....	36
Duck Confit .....	36
Turkey .....	36

Turkey Breast .....	37
Turkey Roll .....	37

### **FISH**

Fish, Baked .....	38
Salmon Steaks .....	38
Trout .....	38

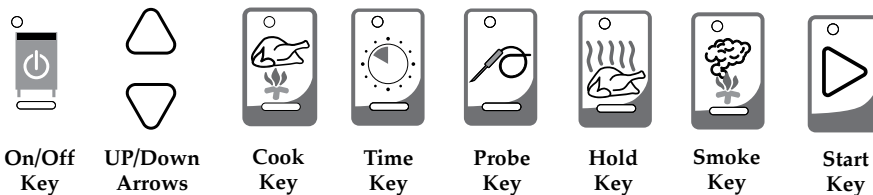
### **MISCELLANEOUS**

Quiche .....	39
Rice .....	39
Baked Egg Custard .....	39
Au Gratin Potatoes .....	40
Canning .....	40
Crème Brulee .....	40
Tempering Chocolate .....	41
Sheet Cake .....	41
Cheese Cake .....	41
Frozen Convenience .....	42-43
Precooked Frozen Finger Foods .....	44
Breakfast Sandwiches .....	44
Cookies .....	45
Proofing Dough .....	45

### **SMOKING**

Beef Brisket .....	46
Pastrami .....	46
Beef Tongue .....	46
Ham .....	47
Ribs .....	47
Pork Butt .....	47
Pork Belly .....	48
Turkey .....	48
Fish Fillets .....	49
Whole Salmon .....	49
Shrimp .....	49
Cold Smoked Salmon .....	50
Cold Smoked Canned Tomatoes .....	51

Quantities listed in this section are per oven compartment



1. Press and release **ON/OFF** key.
2. Press **HOLD** key.
3. Press **UP/DOWN ARROW** keys to set Hold temperature.
4. Press **COOK** key.
5. Press **UP/DOWN ARROW** keys to set Cook temperature.
6. If cooking by probe, press **PROBE** key.  
If cooking by time, press **TIME** key.
7. Press **UP/DOWN ARROW** keys to set Cook time.
8. If Smoking, press **SMOKE** key.
9. Press **UP/DOWN ARROW** keys to set Smoke time.
10. Close oven door. Wait for audible signal to indicate oven has preheated.
11. Press **START** key.

# BEEF, LAMB, VEAL

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	BEEF BRISKET	BEEF SHORT RIBS	BEEF SHORT RIBS, BRAISED
<b>SIZE OF MEAT</b>	Beef Brisket, Fresh, 9-13 lbs (4 to 6 kg)	Short Ribs, 10 to 12 oz. pieces	Short Ribs, 10 to 12 oz. pieces
<b>INSTRUCTIONS</b>	Season brisket and wrap individually in clear plastic wrap for cooking. Place wrapped brisket directly on wire shelves.	Season as desired. Place ribs side-by-side in pans. For an overnight cook and hold, cover pans loosely with clear plastic wrap to retain additional product moisture.	Add ribs to hot liquid for braising.
<b>SUGGESTED PAN</b>	None	Sheet Pan	Full-Size Hotel Pan
<b>NO. OF SHELVES</b>			
AS-250	1	3	2
500	3	3	3
750	2	3	3
1000	3	None	5
1200	3	None	5
<b>ITEMS PER SHELF</b>			
AS-250	1 roast	1 full-size sheet pan	1 full-size pan
500	1 roast	1 half-size sheet pan	1 full-size pan
750	3-4 roasts	1 full-size sheet pan	2 full-size pan
1000	2-3 roasts	1 full-size sheet pan	1 full-size pan
1200	2-3 roasts	1 full-size sheet pan	1 full-size pan
<b>MAX. CAPACITY</b>			
AS-250	1 roast	3 full-size sheet pans	2 full-size pans
500	3 roasts up to 40 lbs (18 kg)	3 half-size sheet pans	4 full-size pans
750	6-8 roasts up to 100 lbs (45 kg)	3 full-size sheet pans	8 full-size pans
1000	6-9 roasts up to 100 lbs (45 kg)	4 full-size sheet pans	4 full-size pans
1200	6-9 roasts up to 100 lbs (45 kg)	4 full-size sheet pans	4 full-size pans
<b>VENT POSITION</b>	One-half open	One-half open	One-half open
<b>COOK TEMP</b>	250°F (121°C)	250°F (121°C)	250°F (121°C)
<b>PROBE TEMP</b>	170°F (77°C)*	170°F (77°C)*	170°F (77°C)*
<b>HOLD TEMP</b>	160°F (71°C)	160°F (71°C)	160°F (71°C)
<b>COOK TIME</b>	20 min/lb for first roast (44 min/kg) plus 30 minutes each additional roast.	3 hours for the first pan plus 30 minutes for each additional pan.	3 hours for the first pan plus 30 minutes for each additional pan.
<b>MIN. HOLD TIME</b>	6 hours	6 hours	6 hours
<b>MAX. HOLD TIME</b>	24 hours	18 hours	12 hours
<b>OVERNIGHT COOK/HOLD</b>	Highly recommended	Required	Highly recommended
<b>FINAL INTERNAL TEMPERATURE</b>	165°F (73°C)	170° to 190°F (77° to 88°C)	170° to 190°F (77° to 88°C)
<b>OVERRIDE ALLOWANCE</b>	45°F to 50°F (25°C to 28°C)	—	15°F (8°C)
<b>ADDITIONAL INFORMATION</b>	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

\* 90°F (32°C) in the 300-TH/III oven

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	BEEF STRIPLOIN	PRIME RIB	PRIME RIB SPECIAL
<b>SIZE OF MEAT</b>	Short-Cut, Boneless: 8-12 lb (4 to 5 kg)	Beef Rib, Roast Ready, with Fat Cap, #109: 20 lb (9 kg) Average Weight	Beef Rib, Roast Ready Special, Tied: 14 to 18 lb (6 to 8 kg) Average Weight
<b>INSTRUCTIONS</b>	Season as desired. Place roasts directly on the wire shelves with fat side down. Place larger roasts toward the top of the oven compartment.	Season as desired. Place roasts directly on wire shelves with the larger roasts toward the top of the oven compartment.	Season as desired. Place roasts directly on wire shelves with the larger roasts toward the top of the oven compartment.
<b>SUGGESTED PAN</b>	None	None	None
<b>NO. OF SHELVES</b>			
AS-250	2	1	1
500	2	2	2
750	2	2	2
1000	3	3	3
1200	3	3	3
<b>ITEMS PER SHELF</b>			
AS-250	1 roast	1 roast	1 roast
500	2 roasts	1 roast	1 roast
750	4 roasts	3 roasts	3 roasts
1000	3 roasts	2 roasts	2 roasts
1200	3 roasts	2 roasts	2 roasts
<b>MAX. CAPACITY</b>			
AS-250	2 roasts up to 24 lb (11 kg)	1 roast 20 lb (9 kg)	1 roast 18 lb (8 kg)
500	4 roasts up to 40 lb (18 kg)	2 roasts - 40 lb (18 kg)	2 roasts 36 lb (16 kg)
750	8 roasts up to 100 lb (45 kg)	6 roasts - 120 lb (54 kg)	6 roasts 100 lb (45 kg)
1000	9 roasts up to 100 lb (45 kg)	6 roasts - 120 lb (54 kg)	6 roasts 100 lb (45 kg)
1200	9 roasts up to 100 lb (45 kg)	6 roasts - 120 lb (54 kg)	6 roasts 100 lb (45 kg)
<b>VENT POSITION</b>	One-half open	One-half open	One-half open
<b>COOK TEMP</b>	250°F (121°C)	250°F (121°C)	250°F (121°C)
<b>PROBE TEMP</b>	100°F (38°C)*	100°F (38°C)*	100°F (38°C)*
<b>HOLD TEMP</b>	140°F (60°C)	140°F (60°C)	140°F (60°C)
<b>COOK TIME</b>	8 to 10 lb roasts (4 to 4,5 kg): 8 minutes per pound for the first roast (18 minutes per kilogram) plus add 8 minutes for each additional roast.  12 lb roasts (5 kg): 10 minutes per pound for the first roast (22 minutes per kilogram) plus add 8 minutes for each additional roast.	10 minutes per pound for the first roast (22 minutes per kilogram) plus add 30 minutes for each additional roast.	10 minutes per pound for the first roast (22 minutes per kilogram) plus add 15 minutes for each additional roast.
<b>MIN. HOLD TIME</b>	4 hours	4 to 6 hours	4 or more hours
<b>MAX. HOLD TIME</b>	12 hours	24 hours	24 hours
<b>OVERNIGHT COOK/HOLD</b>	Optional	Highly Recommended	An overnight cook and hold can be done with this cut.
<b>FINAL INTERNAL TEMPERATURE</b>	130°F (54°C) Rare	130°F (54°C) Rare	130°F (54°C) RARE
<b>OVERRIDE ALLOWANCE</b>	30°F to 40°F (17°C to 22°C) depending on size	30°F (17°C)	30°F (17°C)
<b>ADDITIONAL INFORMATION</b>	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

\* 90°F (32°C) in the 300-TH/III oven

# BEEF, LAMB, VEAL

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	CORNERED BEEF	RIBEYE ROLL	BEEF ROUND
<b>SIZE OF MEAT</b>	9 to 12 lb (4 to 5 kg)	Beef Ribeye Roll, Lip On, #112A: 8 to 12 lb (3 to 5 kg)	Beef Round, Top (Inside), Untrimmed: 14 to 23 lb (6 to 10 kg)  Beef Round, Bottom (Gooseneck), Untrimmed: 14 to 23 lb (6 to 10 kg)
<b>INSTRUCTIONS</b>	Leave the corned beef in the original plastic bag and place the corned beef bag directly on the wire shelf.	Season as desired. Place roasts directly on the wire shelves, fat side down. Place larger roasts toward the top of the oven compartment.	Season as desired. Place roasts directly on wire shelves with fat side down. Place larger roasts toward the top of the oven compartment.
<b>SUGGESTED PAN</b>	None	None	None
<b>NO. OF SHELVES</b> AS-250 500 750 1000 or 1200	2 2 2 3	1 2 2 3	1 1 or 2 2 3
<b>ITEMS PER SHELF</b> AS-250 500 750 1000 or 1200	1 roast 2 roasts 3 to 4 roasts 2 to 3 roasts	1 roast 2 roasts 3 roasts 3 roasts	1 roast  1: 23 lb (10 kg) or 2: 14 lb (6 kg) roasts 3: 23 lb (10 kg) or 4: 14 lb (6 kg) roasts 2: 23 lb (10 kg) or 3: 14 lb (6 kg) roasts
<b>MAX. CAPACITY</b> AS-250 500 750 1000 or 1200	2 roasts up to 24 lb (11 kg) 4 roasts up to 40 lb (18 kg) 6 to 8 roasts up to 100 lb (45 kg) 6 to 9 roasts up to 100 lb (45 kg)	1 roast 12 lb (5 kg) 4 roasts up to 40 lb (18 kg) 6 roasts up to 100 lb (45 kg) 9 roasts up to 100 lb (45 kg)	1 roast up to 23 lb (10 kg) 2 lg. or 4 sm. roasts up to 40 lb (18 kg) 6 roasts up to 100 lb (45 kg) 6 lg. or 9 sm. roasts up to 100 lb (45 kg)
<b>VENT POSITION</b>	One-half open	One-half open	One-half open
<b>COOK TEMP</b>	250°F (121°C)	250°F (121°C)	250°F (121°C)
<b>PROBE TEMP</b>	100°F (38°C)*	100°F (38°C)*	100°F (38°C)*
<b>HOLD TEMP</b>	160°F (71°C)	140°F (60°C)	140°F (60°C)
<b>COOK TIME</b>	20 minutes per pound for the first corned beef (44 minutes per kilogram) plus add 30 minutes for each additional corned beef.	8 to 11 lb (4 to 5 kg) ROASTS: 8 minutes per pound for the first roast (18 minutes per kilogram) plus add 10 minutes for each additional roast.  12 lb (5 kg) ROASTS: 10 minutes per pound for the first roast (22 minutes per kilogram) plus add 10 minutes for each additional roast.	14 lb (6 kg) roasts: 10 minutes per pound for the first roast (22 minutes per kilogram) plus add 15 minutes for each additional roast.  15 to 23 lb (7 to 10kg) roasts: 10 minutes per pound for the first roast (22 minutes per kilogram) plus add 30 minutes for each additional roast.
<b>MIN. HOLD TIME</b>	6 or more hours	4 hours	14 lb (6 kg) roasts: 4 to 6 hours 15 to 23 lb (7 to 10 kg) roasts: 8-10 hrs.
<b>MAX. HOLD TIME</b>	24 hours	12 hours	14 lb (6 kg) roasts: 12 hours 15 to 23 lb (7 to 10 kg) roasts: 24 hours
<b>OVERNIGHT COOK/HOLD</b>	Required	Optional	Optional for smaller roasts. Highly recommended for larger cuts.
<b>FINAL INTERNAL TEMPERATURE</b>	175°F (79°C)	130°F (54°C) RARE	130°F (54°C) Rare
<b>OVERRIDE ALLOWANCE</b>	—	30°F to 40°F (17°C to 22°C) depending on size	30°F (17°C)
<b>ADDITIONAL INFORMATION</b>	If desired corn beef can be removed from the bag and wrapped in clear plastic wrap for cooking.	—	Do not overload the oven.

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

\* 90°F (32°C) in the 300-TH/III oven

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	BEEF ROUND (CAFETERIA OR STEAMSHIP)	TENDERLOIN	VEAL LOIN
<b>SIZE OF MEAT</b>	Any one of a variety of beef rounds used for carving on a buffet line. May be bone-in or boneless and may have a handle on or off as required. WEIGHT RANGE: 40-50 lb (18-23 kg) 50-80 lb (23-36 kg)	Beef Loin, Full Tenderloin, Side Muscle Off, Skinned: 4 to 6 lb (2 to 3 kg)	Veal Loin, Trimmed: 8 to 10 lb (4 to 5 kg)
<b>INSTRUCTIONS</b>	Meat should be at a refrigerated internal temperature of 38° to 40°F (3 to 4°C) when placed in a preheated oven.	Season as desired and place directly on wire shelves.	Season as desired and place directly on wire shelves.
<b>SUGGESTED PAN</b>	None	None	None
<b>NO. OF SHELVES</b>			
AS-250	—	2	1
500	1	2	2
750	1	3	2
1000 or 1200	1	3	3
<b>ITEMS PER SHELF</b>			
AS-250	—	2 tenderloins	1 roast
500	1 roast	3 tenderloins	2 roasts
750	1-2 roasts	5 tenderloins	4 roasts
1000 or 1200	1-2 roasts	5 tenderloins	3 roasts
<b>MAX. CAPACITY</b>			
AS-250	—	4 tenderloins	1 roast
500	40 lb (18 kg)	6 tenderloins	4 roasts
750	up to 80 lb (36 kg)	15 tenderloins	8 roasts
1000 or 1200	up to 80 lb (36 kg)	15 tenderloins	9 roasts
<b>VENT POSITION</b>	One-half open	One-half open	One-half open
<b>COOK TEMP</b>	250°F (121°C)	250° to 275°F (121° to 135°C)	250°F (121°C)
<b>PROBE TEMP</b>	100°F (38°C)*	95°F (35°C)*	100°F (38°C)*
<b>HOLD TEMP</b>	150°F (66°C)	140°F (60°C)	140°F (60°C)
<b>COOK TIME</b>	40 to 49 lb (18 to 22 kg) ROASTS: 10 minutes per pound for the first roast (22 minutes per kilogram) plus add 15 minutes for a second roast. 50 to 80 lb (23 to 36 kg) ROASTS: ONE ROAST ONLY — 7 minutes per pound (15 minutes per kilogram)	Full load to Rare: 1 hour	12 minutes per pound for the first roast (26 minutes per kilogram) plus add 20 minutes for each additional roast.
<b>MIN. HOLD TIME</b>	40-49 lb (18-22 kg) roasts: 6 to 8 hrs. 50-80 lb (23-36 kg) roasts: 8 to 12 hrs.	1 hour	1 hour
<b>MAX. HOLD TIME</b>	24 hours	6 hours	10 hours
<b>OVERNIGHT COOK/HOLD</b>	Required	Not Recommended	Not Recommended
<b>FINAL INTERNAL TEMPERATURE</b>	138°F (59°C) Rare	130°F (54°C) Rare	140°F (60°C) Medium Rare
<b>OVERRIDE ALLOWANCE</b>	—	40°F (22°C)	40°F (22°C)
<b>ADDITIONAL INFORMATION</b>	When cooking these large roasts, reinforce the shelf support by using two wire shelves in one shelf bracket.	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

\* 90°F (32°C) in the 300-TH/III oven

# BEEF, LAMB, VEAL

## PRODUCT SPECIFICATIONS AND PREPARATION

ITEM >	LAMB, LEG	LAMB RACKS (FRENCHED)	LAMB SHANKS
<b>SIZE OF MEAT</b>	Lamb Leg, Boneless, Tied: 8 to 11 lb (4 to 5 kg)	Lamb Rack, Roast Ready, Single, Frenched: 7-bone	Lamb Shanks
<b>INSTRUCTIONS</b>	Season as desired and place directly on wire shelves.	Season as desired. Place racks on sheet pans with icing racks inserted in pans.	Add shanks to hot braising liquid.
<b>SUGGESTED PAN</b>	None	Sheet pan	Full-Size Hotel Pan
<b>NO. OF SHELVES</b> AS-250 500 750 1000 or 1200	1 2 2 3	2 4 4 none	none none none 3
<b>ITEMS PER SHELF</b> AS-250 500 750 1000 or 1200	1 roast 2 roasts 6 roasts 4 roasts	1 half-size sheet pan 1 half-size sheet pan 1 full-size sheet pan 1 full-size sheet pan	1 1 2 1
<b>MAX. CAPACITY</b> AS-250 500 750 1000 or 1200	1 roast 4 roasts up to 40 lb (18 kg) 12 roasts up to 100 lb (45 kg) 12 roasts up to 100 lb (45 kg)	2 half-size sheet pans 4 half-size sheet pans 4 full-size sheet pans 4 full-size sheet pans	1 full-size pans 4 full-size pans 8 full-size pans 4 full-size pans
<b>VENT POSITION</b>	One-half open	One-half open	One-half open
<b>COOK TEMP</b>	250°F (121°C)	250°F (121°C)	250°F (121°C)
<b>PROBE TEMP</b>	105°F (41°C)*	90°F (32°C)*	160°F (71°C)*
<b>HOLD TEMP</b>	RARE: 140°F (60°C) MEDIUM RARE: 140°F (60°C) MEDIUM: 150°F (66°C) MEDIUM WELL: 160°F (71°C) WELL: 160°F (71°C)	160°F (71°C)	160°F (71°C)
<b>COOK TIME</b>	10 minutes per pound for the first roast (22 minutes per kilogram) plus add 15 minutes for each additional roast.	1-1/2 hours Full Load	3 hours + 30 minutes per pan
<b>MIN. HOLD TIME</b>	2 hours	1 Hour	4 Hours
<b>MAX. HOLD TIME</b>	10 hours	4 Hours	12 Hours
<b>OVERNIGHT COOK/HOLD</b>	Optional	Not Recommended	Yes
<b>FINAL INTERNAL TEMPERATURE</b>	RARE: 130°F (54°C) MEDIUM RARE: 135°F (57°C) MEDIUM: 145°F (63°C) MEDIUM WELL: 150°F (66°C) WELL: 160°F (71°C)	135° to 140°F (57° to 60°C)	160°F (71°C)
<b>OVERRIDE ALLOWANCE</b>	25°F (14°C)	45-50°F (25-18°C)	20°F (11°C)
<b>ADDITIONAL INFORMATION</b>	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

\* 90°F (32°C) in the 300-TH/III oven

# PORK, PROCESSED MEATS

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	PORK LEG, FRESH	HAM - CURED AND SMOKED	PORK CHOPS
<b>SIZE OF MEAT</b>	Pork Leg, Fresh: 14 to 17 lb (6 to 8 kg)	Ham, Boneless, Skinless, Cured and Smoked: 10 to 14 lb (4,5 to 6 kg)	Pork Loin Chops: 3 to 8 oz (85 to 227 grams) approximate weight range.  Pork Loin Rib Chops with Pocket (STUFFED): 5 to 8 oz (142 to 227 grams) approximate weight range.  Thickness: 1" to 1-1/2" (25 to 38 mm)
<b>INSTRUCTIONS</b>	Season as desired and place directly on wire shelves.	Place ham directly on wire shelves for cooking.	Season as desired. Place chops side-by-side on sheet pans.
<b>SUGGESTED PAN</b>	None	None	Sheet Pan
<b>NO. OF SHELVES</b>			
AS-250	1	2	3
500	2	2	4
750	2	2	4
1000 or 1200	3	3	None
<b>ITEMS PER SHELF</b>			
AS-250	1 pork leg	1 ham	1 half-size sheet pan
500	2 pork legs	2 hams	1 half-size sheet pan
750	2-4 pork legs	4 hams	1 full-size sheet pan
1000 or 1200	2-3 pork legs	3 hams	1 full-size sheet pan
<b>MAX. CAPACITY</b>			
AS-250	1 pork leg	2 hams	3 half-size sheet pans
500	4 pork legs up to 40 lb (18 kg)	4 hams up to 40 lb (18 kg)	4 half-size sheet pans
750	4 to 8 pork legs up to 100 lb (45 kg)	8 hams up to 100 lb (45 kg)	4 full-size sheet pans
1000 or 1200	6 to 9 pork legs up to 100 lb (45 kg)	9 hams up to 100 lb (45 kg)	5 full-size sheet pans
<b>VENT POSITION</b>	One-half open	One-half open	One-half open
<b>COOK TEMP</b>	250° to 275°F (121° to 135°C)	250° to 275°F (121° to 135°C)	250°F (121°C)
<b>PROBE TEMP</b>	130-135°F (57°C)*	148°F (64°C)*	130°F (54°C)*
<b>HOLD TEMP</b>	160°F (71°C)	160°F (71°C)	160°F (71°C)
<b>COOK TIME</b>	12 minutes per pound for the first pork leg (26 minutes per kilogram) plus add 30 minutes for each additional pork leg	12 minutes per pound for the first ham (26 minutes per kilogram) plus add 30 minutes for each additional ham.	3-1/2 hours Full Load
<b>MIN. HOLD TIME</b>	2 hours	1 to 2 hours	1-1/2 hours
<b>MAX. HOLD TIME</b>	10 hours	10 hours	6 to 8 hours
<b>OVERNIGHT COOK/HOLD</b>	Optional	Optional	Not Recommended
<b>FINAL INTERNAL TEMPERATURE</b>	160°F (71°C)	160°F (71°C)	160° to 170°F (71° to 77°C)
<b>OVERRIDE ALLOWANCE</b>	12°F (7°C)	12°F (7°C)	30°F (17°C)
<b>ADDITIONAL INFORMATION</b>	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

\* 90°F (32°C) in the 300-TH/III oven

# PORK, PROCESSED MEATS

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	PORK LOIN	PORK SHOULDER	PORK RIBS
<b>SIZE OF MEAT</b>	Pork Loin, Boneless, Tied: 8 to 10 lb (4 to 5 kg)	Pork Shoulder, Boston Butt, Boneless: 8 to 10 lb (4 to 5 kg)	Spareribs: 1-1/2 down (38 kg or less) Pork Loin, Back Ribs (BABY BACK RIBS): 1-1/2 down (38 kg or less)
<b>INSTRUCTIONS</b>	Season as desired and place roasts directly on wire shelves for cooking.	Season as desired and place in pans.	Ribs can be cooked from frozen or thawed. Season as desired. Place ribs on sheet pans, slightly overlapping and cover with clear plastic wrap only if cooking overnight. If desired, barbecue sauce can be included with initial seasoning to allow it to cook into the ribs.
<b>SUGGESTED PAN</b>	None	Full-Size Hotel Pan	Sheet Pan
<b>NO. OF SHELVES</b>			
AS-250	2	1	3
500	2	2	3
750	3	None	4
1000 or 1200	3	3	None
<b>ITEMS PER SHELF</b>			
AS-250	2 roasts	2 roasts per pan / 1 pan	1 half-size sheet pan
500	2 roasts	2 roasts per pan / 2 pans	1 half-size sheet pan
750	3 roasts	2 roasts per pan / 2 pans	1 full-size sheet pan
1000 or 1200	3 roasts	2 roasts per pan / 2 pans	1 full-size sheet pan
<b>MAX. CAPACITY</b>			
AS-250	4 roasts	2 roasts	3 half-size sheet pans approx. 20 lb (9 kg)
500	4 roasts up to 40 lb (18 kg)	4 roasts up to 40 lb (18 kg)	3 half-size sheet pans approx. 20 lb (9 kg)
750	9 roasts up to 100 lb (45 kg)	10 roasts up to 100 lb (45 kg)	4 full-size sheet pans
1000 or 1200	9 roasts up to 100 lb (45 kg)	12 roasts up to 100 lb (45 kg)	5 full-size sheet pans
<b>VENT POSITION</b>	One-half open	One-half open	One-half open
<b>COOK TEMP</b>	250° to 275°F (121° to 135°C)	250°F (121°C)	250°F (121°C)
<b>PROBE TEMP</b>	120°F (49°C)*	175°F (80°C)*	Not Recommended
<b>HOLD TEMP</b>	160°F (71°C)	160°F (71°C)	160°F (71°C)
<b>COOK TIME</b>	15 minutes per pound for the first roast (33 minutes per kilogram) plus add 30 minutes for each additional roast.	20 minutes per pound for the first roast (33 minutes per kilogram) plus add 30 minutes for each additional roast.	THAWED RIBS: 2-1/2 to 3-1/2 hours FROZEN RIBS: 3-1/2 to 4-1/2 hours Full Load
<b>MIN. HOLD TIME</b>	2 hours	2 hours	1-1/2 hours
<b>MAX. HOLD TIME</b>	12 hours	12 hours	12 hours
<b>OVERNIGHT COOK/HOLD</b>	Highly Recommended	Highly Recommended	Optional
<b>FINAL INTERNAL TEMPERATURE</b>	155° to 165°F (68° to 74°C)	165° to 170°F (74° to 77°C)	160° to 170°F (71° to 77°C) Well Done
<b>OVERRIDE ALLOWANCE</b>	12°F (7°C)	—	—
<b>ADDITIONAL INFORMATION</b>	—	—	Additional barbecue sauce can be added after completing the hold cycle. Heat sauce to 150°F (66°C) and coat ribs just before serving.

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

\* 90°F (32°C) in the 300-TH/III oven

# PORK, PROCESSED MEATS

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	PIG, WHOLE	PROCESSED MEATS	RECIPE
<b>SIZE OF MEAT</b>	33 lb. whole pig	Sausage, Fresh: Any of a variety of processed meat product including bratwurst, Polish sausage, breakfast links, smoked sausage, hot dogs, etc.	
<b>INSTRUCTIONS</b>	Bend hind legs under the pig so that it sits on the shelf. Brush with caramel color and season.	Place sausage side-by-side on sheet pans. Add a sufficient amount of hot water so that it just covers the bottom of each pan. Cover each pan with clear plastic wrap.	
<b>SUGGESTED PAN</b>	None	Sheet Pan	
<b>NO. OF SHELVES</b>			
AS-250	—	3	
500	—	4	
750	1	5	
1000 or 1200	2	None	
<b>ITEMS PER SHELF</b>			
AS-250	—	1 half-size sheet pan	
500	—	1 half-size sheet pan	
750	1	1 full-size sheet pan	
1000 or 1200	1	1 full-size sheet pan	
<b>MAX. CAPACITY</b>			
AS-250	—	3 half-size sheet pans	
500	—	4 half-size sheet pans	
750	1	5 full-size sheet pans	
1000 or 1200	1	8 full-size sheet pans	
<b>VENT POSITION</b>	Open Full	Open Full	
<b>COOK TEMP</b>	250°F (121°C)	250°F (121°C)	
<b>PROBE TEMP</b>	175°F (80°C)*	Not Recommended	
<b>HOLD TEMP</b>	160°F (71°C)	160°F (71°C)	
<b>COOK TIME</b>	5 hours	1-1/2 to 2 hours Full Load	
<b>MIN. HOLD TIME</b>	none	none	
<b>MAX. HOLD TIME</b>	12 hours	6 hours	
<b>OVERNIGHT COOK/HOLD</b>	Required	Not Recommended	
<b>FINAL INTERNAL TEMPERATURE</b>	167°F (75°C)	170°F (77°C)	
<b>OVERRIDE ALLOWANCE</b>	—	—	
<b>ADDITIONAL INFORMATION</b>	Reheating time: 250°F (121°C) 5 hours	For precooked sausage, follow the same time and temperature settings as fresh sausage. Cooking time for a precooked sausage will vary, particularly for less than full loads. When heating a full load of precooked sausage, check the internal product temperature after approximately one (1) hour of cooking time.	

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

\* 90°F (32°C) in the 300-TH/III oven

# POULTRY

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	CHICKEN, PIECES AND HALVES	CHICKEN, WHOLE
<b>SIZE OF MEAT</b>	2-1/2 to 2-3/4 lb (1,1 to 1,2 kg) avg. wt.	2-1/4 to 2-3/4 lb (1 to 1,2 kg)
<b>INSTRUCTIONS</b>	Clean chicken and remove excess fat. Brush chicken with oil, butter or margarine (OPTIONAL). Season as desired and sprinkle with paprika.	Clean chicken and remove excess fat. Brush chicken with oil, butter or margarine (OPTIONAL). Season as desired and sprinkle with paprika. For better whole bird appearance, fold chicken wings and tuck under the back of the bird. Make a slit in the skin of the chicken (lower end of the bird), cross chicken legs and insert both legs through the slit.
<b>SUGGESTED PAN</b>	Sheet Pan	Sheet Pan
<b>NO. OF SHELVES</b>		
AS-250	2	2
500	3	2
750	3	2
1000 or 1200	None	None
<b>ITEMS PER SHELF</b>		
AS-250	1 half-size sheet pan	3 chickens
500	1 half-size sheet pan	4 chickens
750	1 full-size sheet pan	9 chickens
1000 or 1200	1 full-size sheet pan	9 chickens
<b>MAX. CAPACITY</b>		
AS-250	12 halves, 2 half-size sheet pans	6 chickens - 6 full size pans
500	18 halves or 60 pieces, 3 half-size sheet pans	8 chickens - 2 half-size sheet pans
750	36 halves or 120 pieces, 3 full-size sheet pans	18 chickens - 2 full-size sheet pans
1000 or 1200	48 halves or 160 pieces 4 full-size sheet pans	27 chickens - 3 full-size sheet pans
<b>VENT POSITION</b>	Open Full	Open Full
<b>COOK TEMP</b>	275° to 300°F (135° to 149°C)	275° to 300°F (135° to 149°C)
<b>PROBE TEMP</b>	155°F (68°C)*	155°F (68°C)*
<b>HOLD TEMP</b>	160°F (71°C)	160°F (71°C)
<b>COOK TIME</b>	2-1/2 to 3 hours, Full Load	3 to 3-1/2 hours, Full Load
<b>MIN. HOLD TIME</b>	30 minutes	1 hour
<b>MAX. HOLD TIME</b>	8 hours NOTE: When holding longer than 30 minutes, cover chickens with clear plastic wrap.	8 to 10 hours NOTE: When cooking and holding overnight, cover the pans of raw chicken with clear plastic wrap for cooking. Set cooking thermostat to 250°F (121°C) for 4 hours.
<b>OVERNIGHT COOK/HOLD</b>	Not Recommended	Optional See Max. Holding Time note above
<b>FINAL INTERNAL TEMPERATURE</b>	185°F (85°C)	185°F (85°C)
<b>OVERRIDE ALLOWANCE</b>	12°F (7°C)	10° to 15°F (6° to 8°C)
<b>ADDITIONAL INFORMATION</b>	—	If barbecue sauce is desired, heat sauce to 150°F (66°C) and coat chicken approximately 1 hour before serving.

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

\* 90°F (32°C) in the 300-TH/III oven

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	CHICKEN, FRIED (TWO-STEP METHOD**)	CORNISH HENS
SIZE OF MEAT	2-1/2-2-3/4 lb (1,1-1,2 kg) fryer, 8 pc. cut	12 oz (340 grams) each
INSTRUCTIONS	Clean chicken and remove all excess fat. Soak chicken in cold, salted water for 15 minutes, drain, and dredge in dry breading. Coat pans with vegetable release spray. Place chicken side-by-side on pans — separating breasts and wings from legs and thighs. Cover chicken loosely with clear plastic wrap.	Clean hens and remove excess fat. Fold wings and tuck under the back of the bird. Make a slit in the skin of the hen (lower end of bird), cross hen legs and insert both legs through the slit. Brush hens with oil, butter, or margarine (OPTIONAL). Season as desired and sprinkle with paprika. Space evenly on sheet pans.
SUGGESTED PAN	Sheet Pan	Sheet Pan
NO. OF SHELVES		
AS-250	2	1
500	3	2
750	3	3
1000 or 1200	None	None
ITEMS PER SHELF		
AS-250	1 half-size sheet pan	1 half-size sheet pan, 9 hens per pan
500	1 half-size sheet pan	1 half-size sheet pan, 9 hens per pan
750	1 full-size sheet pan	1 full-size sheet pan, 18 hens per pan
1000 or 1200	1 full-size sheet pan	1 full-size sheet pan, 18 hens per pan
MAX. CAPACITY		
AS-250	12 halves, 2 half-size sheet pans	1 half-size sheet pan, 9 hens per pan
500	18 halves or 60 pieces, 3 half-size pans	2 half-size sheet pans, 18 cornish hens
750	36 halves or 120 pieces, 3 full-size pans	3 full-size sheet pans, 54 cornish hens
1000 or 1200	48 halves or 160 pieces, 4 full-size pans	4 full-size sheet pans, 72 cornish hens
VENT POSITION	One-Half Open	Open Full
COOK TEMP	275°F (135°C)	275°F (135°C)
PROBE TEMP	155°F (68°C)*	155°F (68°C)*
HOLD TEMP	160°F (71°C)	160°F (71°C)
COOK TIME	2-1/2 to 3 hours - Full Load	3 to 3-1/2 hours - Full Load
MIN. HOLD TIME	none	1 hour
MAX. HOLD TIME	4 hours	4 to 6 hours
OVERNIGHT COOK/HOLD	Not Recommended	Not Recommended
OVERRIDE ALLOWANCE	12°F (7°C)	10°F (6°C)
FINAL INTERNAL TEMPERATURE	180°F (79°C)	175°F (79°C)
ADDL INFO.	See below	—
The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.		

\* 90°F (32°C) in the 300-TH/III oven

#### \*\*TWO-STEP FRIED CHICKEN

The two-step method consists of precooking the chicken in a low temperature oven to retain the product moisture, then adding the crisp, fried appearance by inserting the product in a fryer for a very short period of time. This method can be used with product directly from the oven or the product can be precooked and fried directly from refrigerated storage. With the two-step method the chicken will be moist, flavorful, plump and golden brown. Shrinkage will be low and shortening in the fryer will last much longer.

#### FRYING DIRECTLY FROM THE OVEN

1. Preheat fryer to 335°F (168°C).
2. If heavier or crisper breading is desired, remove required portion of chicken from the oven and dredge in fresh breading.
3. Drop chicken in fryer for three minutes or until chicken is golden brown.
4. Chicken can be fried per customer order or in larger quantities. When frying larger quantities, place fried pieces on a sheet pan with wire grid insert and place pans in a preheated Alto-Shaam display case or in a preheated holding cabinet with door vents fully open.

#### FRYING FROM REFRIGERATED STORAGE

1. Remove chicken from the Alto-Shaam Halo Heat oven, wrap, chill rapidly and store under refrigeration at 38° to 40°F (3° to 4°C).
2. Preheat fryer to 335°F (168°C).
3. Remove required portion of precooked chicken from refrigerated storage.
4. Drop chicken in fryer for 6 to 7 minutes or until chicken is golden brown.

# POULTRY

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	DUCK, WHOLE	DUCK CONFIT	TURKEY
<b>SIZE OF MEAT</b>	Duck, Whole: 4 to 5 lb (2 kg)	Duck, Pieces	Turkey, Whole: 25 lb (11 kg)
<b>INSTRUCTIONS</b>	Season as desired. Rub with oil and paprika and place directly on wire shelves.	Prepare according to recipe.	Turkey must be fully thawed. Season as desired. Rub with oil, butter or margarine (OPTIONAL), and sprinkle with paprika. Place directly on wire shelves.
<b>SUGGESTED PAN</b>	None	Full-Size Hotel Pan	None
<b>NO. OF SHELVES</b>			
AS-250	1	2	1
500	2	2	1
750	2	4	1
1000 or 1200	3	4	2
<b>ITEMS PER SHELF</b>			
AS-250	3 ducks	1 full-size pan	1 turkey
500	3 ducks	1 full-size pans	1 turkey
750	6 ducks	2 full-size pans	2 turkeys
1000 or 1200	4 ducks	1 full-size pan	2 turkeys
<b>MAX. CAPACITY</b>			
AS-250	3 ducks	2 full-size pans	1 turkey
500	6 ducks	4 full-size pans	1 turkey
750	12 ducks	8 full-size pans	2 turkeys
1000 or 1200	12 ducks	4 full-size pans	4 turkeys
<b>VENT POSITION</b>	Open Full	Open Full	Open Full
<b>COOK TEMP</b>	300°F (149°C)	250°F (121°C)	250°F (121°C)
<b>PROBE TEMP</b>	155°F (68°C)*	Not Recommended	Probe to 145°F (63°C)* in thigh
<b>HOLD TEMP</b>	160°F (71°C)	160°F (71°C)	160°F (71°C)
<b>COOK TIME</b>	2-1/2 to 3 hours - Full Load	3 hours	10 minutes per pound for the first turkey (22 minutes per kg) plus add 30 minutes for each additional turkey.
<b>MIN. HOLD TIME</b>	1 hour	4 hours	1 to 2 hours
<b>MAX. HOLD TIME</b>	8 hours	12 hours	10 hours
<b>OVERNIGHT COOK/HOLD</b>	Not Recommended	Yes	Highly Recommended
<b>OVERRIDE ALLOWANCE</b>	20°F (11°C)	—	185°F (85°C)
<b>FINAL INTERNAL TEMPERATURE</b>	185° to 190°F (85° to 88°C)	185°F (85°C)	10-20°F (6-11°C) Depending on size
<b>ADDL INFO.</b>	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

\* 90°F (32°C) in the 300-TH/III oven

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	TURKEY BREAST	TURKEY ROLL	RECIPE
<b>SIZE OF MEAT</b>	10 to 15 lb (5 to 7 kg)	Precooked, Frozen: 8-12 lb (4-5 kg)	
<b>INSTRUCTIONS</b>	Turkey breast should be at a refrigerated temperature of 38° to 40°F (3° to 4°C) when placed in a preheated oven. Season as desired. Brush with oil, butter or margarine (OPTIONAL), and sprinkle with paprika. Place breasts directly on wire shelves.	Place fully frozen turkey rolls directly on wire shelves to reheat.	
<b>SUGGESTED PAN</b>	None	None	
<b>NO. OF SHELVES</b>			
AS-250	2	1	
500	2	2	
750	2	2	
1000 or 1200	3	3	
<b>ITEMS PER SHELF</b>			
AS-250	1 turkey breasts	1 turkey rolls	
500	2 turkey breasts	2 turkey rolls	
750	4 turkey breasts	4 turkey rolls	
1000 or 1200	3 turkey breasts	3 turkey rolls	
<b>MAX. CAPACITY</b>			
AS-250	2 turkey breasts	1 turkey rolls	
500	4 turkey breasts	4 turkey rolls	
750	8 turkey breasts	8 turkey rolls	
1000 or 1200	9 turkey breasts	9 turkey rolls	
<b>VENT POSITION</b>	Open Full	Open Full	
<b>COOK TEMP</b>	250° to 275°F (121° to 135°C)	250°F (121°C)	
<b>PROBE TEMP</b>	140°F (60°C)*	140°F (60°C)*	
<b>HOLD TEMP</b>	160°F (71°C)	160°F (71°C)	
<b>COOK TIME</b>	3-1/2 to 4-1/2 hours Full Load	3 to 4 hours Full Load	
<b>MIN. HOLD TIME</b>	1 hour	1 hour	
<b>MAX. HOLD TIME</b>	10 hours	6 to 8 hours	
<b>OVERNIGHT COOK/HOLD</b>	Optional NOTE: When cooking and holding overnight, set the cook thermostat at 250°F (121°C)	Not Recommended	
<b>FINAL INTERNAL TEMPERATURE</b>	180°F (82°C)	165°F (74°C)	
<b>OVERRIDE ALLOWANCE</b>	8°F (4°C)	10°F (6°C)	
<b>ADDITIONAL INFORMATION</b>		—	

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

\* 90°F (32°C) in the 300-TH/III oven

# FISH

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	FISH, BAKED	SALMON STEAKS	TROUT
<b>SIZE OF MEAT</b>	Fish Fillets, Fresh or Frozen: 6 to 8 oz (170 to 227 grams)	6 to 8 oz (170 to 227 grams), 1" (25mm) thick	Whole: 1 lb (454 gm) dressed
<b>INSTRUCTIONS</b>	Do not thaw frozen fillets. Spray or coat sheet pans with oil. Place fillets side-by-side on sheet pans. Brush fish with oil, butter or margarine. Season as desired and sprinkle lightly with paprika. Loosely cover pans with clear plastic wrap.	Spray or coat sheet pans with oil, butter or margarine. Place steaks side-by-side on sheet pans. Season as desired.	Spray or coat sheet pans with oil. Wipe trout with a damp towel and place side-by-side on sheet pans. Season as desired.
<b>SUGGESTED PAN</b>	Sheet Pan	Sheet Pan	Sheet Pan
<b>NO. OF SHELVES</b> <b>AS-250</b> <b>500</b> <b>750</b> <b>1000 or 1200</b>	3 4 6 None	3 4 4 None	4 6 6 None
<b>ITEMS PER SHELF</b> <b>AS-250</b> <b>500</b> <b>750</b> <b>1000 or 1200</b>	1 half-size sheet pan 1 half-size sheet pan 1 full-size sheet pan 1 full-size sheet pan	7-8 steaks per pan, 1 half-size sheet pan 7-8 steaks per pan, 1 half-size sheet pan 15 steaks per pan, 1 full-size sheet pan 15 steaks, 1 full-size sheet pan	6 trout, 1 half-size sheet pan 6 trout, 1 half-size sheet pan 12 trout, 1 full-size sheet pan 12 trout, 1 full-size sheet pan
<b>MAX. CAPACITY</b> <b>AS-250</b> <b>500</b> <b>750</b> <b>1000 or 1200</b>	3 half-size sheet pans 4 half-size sheet pans 6 full-size sheet pans 8 full-size sheet pans	21-24 steaks, 1 half-size sheet pans 28-32 steaks, 4 half-size sheet pans 60 steaks, 4 full-size sheet pans 75 steaks, 5 full-size sheet pans	24 trout, 4 half-size sheet pans 36 trout, 6 half-size sheet pans 72 trout, 6 full-size sheet pans 96 trout, 8 full-size sheet pans
<b>VENT POSITION</b>	One-half open	One-half open	One-half open
<b>COOK TEMP</b>	275°F (135°C)	275°F (135°C)	275°F (135°C)
<b>PROBE TEMP</b>	Not Recommended	Not Recommended	Not Recommended
<b>HOLD TEMP</b>	160°F (71° C)	160°F (71°C)	160°F (71°C)
<b>COOK TIME</b>	1-1/2 to 2-1/2 hours Full Load	1-1/2 hours Full Load	1 to 1-1/2 hours Full Load
<b>MIN. HOLD TIME</b>	none	1 hour	none
<b>MAX. HOLD TIME</b>	3 to 4 hours Holding time will vary greatly depending on the type of fish and the initial product moisture content.	3 to 4 hours	4 to 6 hours
<b>OVERNIGHT COOK/HOLD</b>	Not Recommended	Not Recommended	Not Recommended
<b>FINAL INTERNAL TEMPERATURE</b>	150°F (71°C)	150°F (66°C)	150°F (66°C)
<b>OVERRIDE ALLOWANCE</b>	—	—	—
<b>ADDITIONAL INFORMATION</b>	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	QUICHE	RICE	BAKED EGG CUSTARD
ITEM/AMOUNT	As needed	As needed	As needed
INSTRUCTIONS	Prebake the shells in pie plates at 275°F (135°C) for approximately 40 minutes. Pour the quiche mixture into the prebaked shells and bake in a preheated oven. Quiche is done when product sets-up.	Use 1 x 1 or 1 x 1-1/2 ratio of rice to water. Rice that is high in starch needs to be rinsed. Fill pans to half the pan depth and cover pans with foil.	Use a favorite custard recipe. Pour custard mixture into cups to a depth of 2/3 the container height and place cups on a sheet pan. NO WATER BATH IS REQUIRED. Bake in a preheated oven. Custard is done when knife inserted in center of cup is clean when removed.
SUGGESTED PAN	Pie Plate	Hotel Pan	Sheet Pan
NO. OF SHELVES			
AS-250	2	None	3
500	2	None	4
750	4	None	4
1000 or 1200	8	3	None
ITEMS PER SHELF			
AS-250	2 quiches	1 full-size pan	1 half-size sheet pan
500	2 quiches	1 full-size pan	1 half-size sheet pan
750	5 quiches	2 full-size pans	1 full-size sheet pan
1000 or 1200	3 quiches	1 full-size pan	1 full-size sheet pan
MAX. CAPACITY			
AS-250	4 quiches	2 full-size pans	3 half-size sheet pans
500	4 quiches	2 full-size pans	4 half-size sheet pans
750	20 quiches	4 full-size pans	4 full-size sheet pans
1000 or 1200	24 quiches	3 full-size pans	5 full-size sheet pans
VENT POSITION	Open Full	Closed	Closed
COOK TEMP	275°F (135°C)	275°F (135°C)	250°F (121°C)
PROBE TEMP	Not Recommended	Not Recommended	Not Recommended
HOLD TEMP	160°F (71°C)	160°F (71°C)	—
COOK TIME	Bake approximately 2 hours or until product sets-up. Full Load	60 minutes - 3 hours depending on load and pan size	60-90 minutes, 4 oz. ramekins Up to 3 hours for 4" hotel pans
MIN. HOLD TIME	None	None	None
MAX. HOLD TIME	5 hours	8 hours	None
OVERNIGHT COOK/HOLD	No	Optional	No
FINAL INTERNAL TEMPERATURE	—	160° to 170°F (71° to 77°C)	—
OVERRIDE ALLOWANCE	—	—	—
ADDITIONAL INFORMATION	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

MISCELLANEOUS

PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	AU GRATIN POTATOES	CANNING	CRÈME BRULEE
ITEM/AMOUNT	As needed	As needed	As needed
INSTRUCTIONS	Follow recipe as desired.	Follow recipe as desired.	Follow recipe as desired. Pour into individual ramekins and place on sheet pan.
SUGGESTED PAN	Hotel Pan	Hotel or Sheet Pan	Hotel or Sheet Pan
NO. OF SHELVES AS-250 500 750 1000 or 1200	2 3 3 5	As needed	2 4 4 None
ITEMS PER SHELF AS-250 500 750 1000 or 1200	2 half-size pans 2 half-size pans 4 half-size pans 2 half-size pans	As needed	1 half-size pan 1 full-size pan 1 full-size pan 1 full-size pan
MAX. CAPACITY AS-250 500 750 1000 or 1200	2 full-size pans 4 full-size pans 8 full-size pans 4 full-size pans	2 hotel or full-size pans 4 hotel or full-size pans 8 full-size pans/ 4 sheet pans 4 hotel or full-size pans	2 hotel or full-size pans 4 hotel or full-size pans 8 full-size pans/ 4 sheet pans 4 hotel or full-size pans
VENT POSITION	Closed	Closed	Closed
COOK TEMP	300°F (149°C)	225°F (107°C)	275°F (135°C)
PROBE TEMP	Not Recommended	Not Recommended	Not Recommended
HOLD TEMP	160°F (71°C)	—	—
COOK TIME	90 minutes, plus 20 minutes per additional pan	20 min	1 hr + 15 min/pan
MIN. HOLD TIME	—	—	—
MAX. HOLD TIME	8 hours	—	—
OVERNIGHT COOK/HOLD	No	No	No
FINAL INTERNAL TEMPERATURE	—	—	—
OVERRIDE ALLOWANCE	—	—	—
ADDITIONAL INFORMATION	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	TEMPERING CHOCOLATE	SHEET CAKE	CHEESE CAKE
ITEM/AMOUNT	As needed	As needed	As needed
INSTRUCTIONS	Place chocolate in pan	Use a favorite cake recipe or mix. Pour batter in pans to one-half the pan depth. Keep oven door closed during the cooking cycle. The cake is done when a toothpick inserted in the center of the cake is clean when removed.	Use a favorite cheese cake recipe or mix. Pour batter into spring-form pans and bake in a preheated oven. The cheese cake is done when a toothpick inserted in the center is clean when removed. To prevent cracking, allow the cheese cake to remain in the oven until it reaches room temperature.
SUGGESTED PAN	As desired	Sheet Pan	Spring-Form Pan
NO. OF SHELVES AS-250 500 750 1000 or 1200	As needed	3 4 4 None	2 2 4 4
ITEMS PER SHELF AS-250 500 750 1000 or 1200	As needed	1 half-size sheet pan 1 half-size sheet pan 1 full-size sheet pan 1 full-size sheet pan	2 cakes 2 cakes 5 cakes 3 cakes
MAX. CAPACITY AS-250 500 750 1000 or 1200	—	3 half-size sheet pans 4 half-size sheet pans 4 full-size sheet pans 4 full-size sheet pans	4 cakes 4 cakes 20 cakes 12 cakes
VENT POSITION	Closed	Open Full	Open Full
COOK TEMP	115°F (46°C)	325°F (163°C)	250°F (121°C)
PROBE TEMP	Not Recommended	Not Recommended	Not Recommended
HOLD TEMP	—	—	—
COOK TIME	Until 115	1-1/2 hours Full Load	90 minutes to 2-3 hours depending on pan depth
MIN. HOLD TIME	—	None	None
MAX. HOLD TIME	—	None	None
OVERNIGHT COOK/HOLD	No	No	No
FINAL INTERNAL TEMPERATURE	115°F (46°C)	—	—
OVERRIDE ALLOWANCE	—	—	—
ADDITIONAL INFORMATION	—	—	—
The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.			

# MISCELLANEOUS

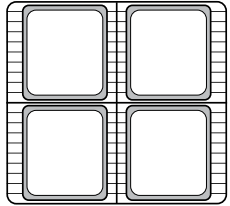
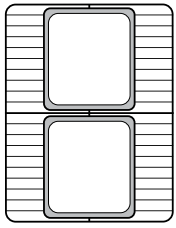
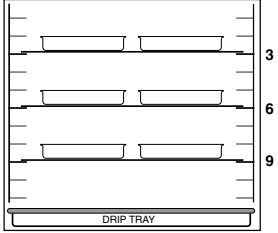
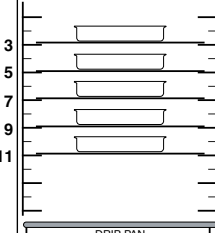
## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	FROZEN CONVENIENCE ENTRÉES	FROZEN PORTIONED CONVENIENCE ENTRÉES
ITEM/AMOUNT	As needed	As needed
INSTRUCTIONS	PRODUCT MUST BE FULLY FROZEN WHEN PLACED IN A PREHEATED OVEN. Leave product in original container with foil cover in place.* Pour 1/2 gallon (1 liter) of hot water into the drip pan located on the bottom surface of the oven compartment. Place containers directly on wire shelves.	
SUGGESTED PAN	Half-Size Pan	None
NO. OF SHELVES		
AS-250	—	—
500	—	—
750	3	3
1000 or 1200	5	3
ITEMS PER SHELF		
AS-250	—	—
500	—	—
750	4 foil half-size pans	9
1000 or 1200	2 foil half-size pans	9
MAX. CAPACITY		
AS-250	—	—
500	—	—
750	12 foil half-size pans	27
1000 or 1200	10 foil half-size pans	27
VENT POSITION	Closed	Closed
COOK TEMP	275°F (135°C)	275°F (135°C)
PROBE TEMP	Not Recommended	Not Recommended
HOLD TEMP	160°F (71°C)	160°F (71°C)
COOK TIME	SEE PAN PLACEMENT DIAGRAMS AND TIME SETTINGS ON THE FOLLOWING PAGE.	APPROXIMATELY 2 HOURS. SEE PAN PLACEMENT DIAGRAMS ON FOLLOWING PAGE. DO NOT OVER-COOK — CHECK INTERNAL PRODUCT TEMPERATURE.
MIN. HOLD TIME	None	None
MAX. HOLD TIME	16 to 18 hours	4 hours
OVERNIGHT COOK/HOLD	Optional	Not Recommended
FINAL INTERNAL TEMPERATURE	140°F (60°C)*	140°F (60°C)*
OVERRIDE ALLOWANCE	—	—
ADDITIONAL INFORMATION	* Frozen convenience entrées removed from the original food processor's intact packaging must be treated as a product for reheating. Products for reheating must reach an internal product temperature of 165°F (74°C) for the amount of time specified by local health (hygiene) regulations.	

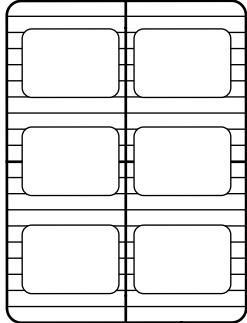
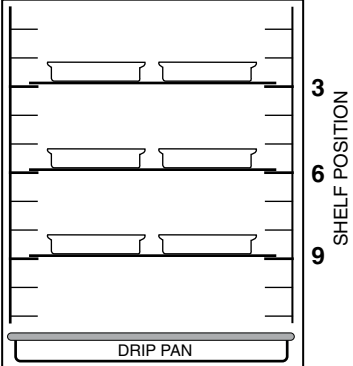
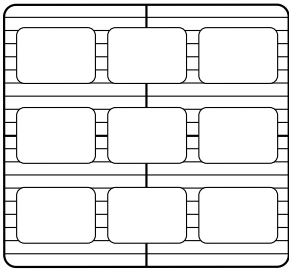
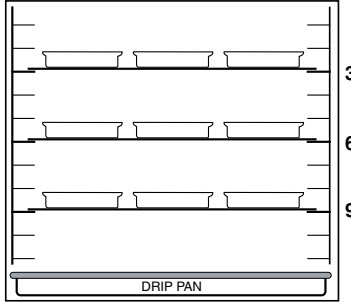
The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

## PRODUCT SPECIFICATIONS AND PREPARATION

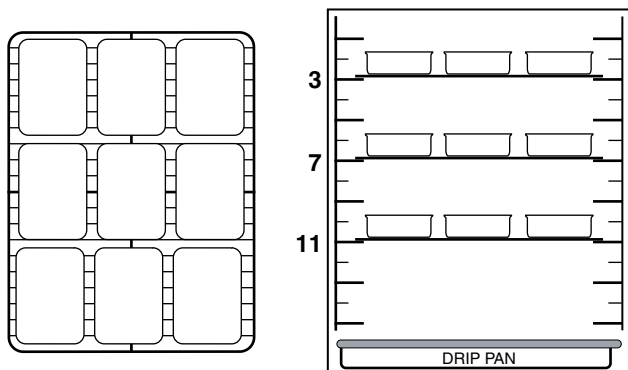
### FROZEN CONVENIENCE ENTRÉES

500 & 750 SERIES			1000 & 1200 SERIES		
QUANTITY HALF-PANS	TIMER SETTING TOTAL HOURS	TOP VIEW	QUANTITY HALF-PANS	TIMER SETTING TOTAL HOURS	TOP VIEW
1	2 hours, 30 minutes		1	2 hours, 45 minutes	
2	2 hours, 45 minutes		2	3 hours, 00 minutes	
3	3 hours, 30 minutes		3	3 hours, 00 minutes	
4	3 hours, 30 minutes		4	3 hours, 45 minutes	
5	4 hours, 00 minutes		5	4 hours, 00 minutes	
6	4 hours, 30 minutes		6	4 hours, 40 minutes	
7	5 hours, 00 minutes		7	5 hours, 00 minutes	
8	5 hours, 00 minutes		8	5 hours, 00 minutes	
9	6 hours, 40 minutes		9	6 hours, 00 minutes	
10	7 hours, 25 minutes		10	6 hours, 00 minutes	
11	7 hours, 25 minutes				
12	7 hours, 25 minutes				

### FROZEN PORTIONED CONVENIENCE ENTRÉES

500 SERIES		750 SERIES	
			

### 1000 & 1200 SERIES



# MISCELLANEOUS

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	PRECOOKED FROZEN FINGER FOOD	BREAKFAST SANDWICHES
<b>ITEM/AMOUNT</b>	CHICKEN NUGGETS: 40 per full-size sheet pan*. CORN DOGS: 30 per full-size sheet pan*. EGG ROLLS: 40 per full-size sheet pan*. MINI PIZZA: 12 to 15 per full-size sheet pan*. *Quantities are approximate	Approximately 36 wrapped sandwiches per full-size sheet pan.
<b>INSTRUCTIONS</b>	Line sheet pans with baking pan liners (optional) and insert wire pan grid. Place items side-by-side on the wire pan grids.	Place sandwiches on pans.
<b>SUGGESTED PAN</b>	Sheet Pan	Sheet Pan
<b>NO. OF SHELVES</b>		
AS-250	2	2
500	3	3
750	5	3
1000 or 1200	None	None
<b>ITEMS PER SHELF</b>		
AS-250	1 half-size sheet pan	1 half-size sheet pan
500	1 half-size sheet pan	1 half-size sheet pan
750	1 full-size sheet pan	1 full-size sheet pan
1000 or 1200	1 full-size sheet pan	1 full-size sheet pan
<b>MAX. CAPACITY</b>		
AS-250	2 half-size sheet pans	2 half-size sheet pans
500	3 half-size sheet pans	3 half-size sheet pans
750	5 full-size sheet pans	3 full-size sheet pans
1000 or 1200	5 full-size sheet pans	5 full-size sheet pans
<b>VENT POSITION</b>	Open Full	Open Full
<b>COOK TEMP</b>	275°F (135°C)	275°F (135°C)
<b>PROBE TEMP</b>	Not Recommended	Not Recommended
<b>HOLD TEMP</b>	160°F (71°C)	160°F (71°C)
<b>COOK TIME</b>	CORN DOGS: 30 to 45 minutes EGG ROLL/CHICKEN NUGGETS: 45 to 60 minutes* MINI PIZZA: 60 minutes*	90 minutes Probe to 160°F (71°C)
<b>MIN. HOLD TIME</b>	None	None
<b>MAX. HOLD TIME</b>	Maximum holding time varies from product to product. Generally expect a 1 to 3 hour maximum holding time for product acceptability.	5 hours
<b>OVERNIGHT COOK/HOLD</b>	Not Recommended	Not Recommended
<b>FINAL INTERNAL TEMPERATURE</b>	150°F (66°C)	160°F (66°C)
<b>OVERRIDE ALLOWANCE</b>	—	—
<b>ADDITIONAL INFORMATION</b>	Make certain product reaches the fully heated temperature. Check internal product temperature before removing product from oven and adjust heating time as required.	Make certain product reaches the fully heated temperature. Check internal product temperature before removing product from oven and adjust heating time as required.

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	COOKIES	PROOFING DOUGH
<b>ITEM/AMOUNT</b>	Premixed frozen commercial cookie dough at room temperature. Premixed frozen commercial cookie dough pieces.	As needed
<b>INSTRUCTIONS</b>	Preheat oven at 325°F (163°C) for a minimum of one hour. Line full-size sheet pans with baking pan liners. Use a number 30 scoop to produce a 1 oz (28 gm) cookie. Evenly space portioned cookie dough on sheet pans and load all pans in the oven at one time. Oven doors must remain closed during baking. DO NOT OVER-BAKE. Approximate pan capacity: 24 cookies per full-size sheet pan	Remove dough from retarder or refrigerator, and allow covered product to set up at room temperature. Preheat oven for 45-60 Minutes. Pour approximately 2 quarts (c. 2 liters) of hot water, 140-180°F (60-82°C) into a pan on the bottom surface of the oven compartment.
<b>SUGGESTED PAN</b>	Sheet Pan	Sheet Pan
<b>NO. OF SHELVES</b> AS-250 500 750 1000 or 1200	3 6 6 None	3 6 6 None
<b>ITEMS PER SHELF</b> AS-250 500 750 1000 or 1200	1 half-size sheet pan 1 half-size sheet pan 1 full-size sheet pan 1 full-size sheet pan	1 half-size sheet pan 1 half-size sheet pan 1 full-size sheet pan 1 full-size sheet pan
<b>MAX. CAPACITY</b> AS-250 500 750 1000 or 1200	2 half-size sheet pans 6 half-size sheet pans 6 full-size sheet pans 8 full-size sheet pans	3 half-size sheet pans 6 half-size sheet pans 6 full-size sheet pans 8 full-size sheet pans
<b>VENT POSITION</b>	Open Full	One-Half Open
<b>COOK TEMP</b>	325°F (163°C)	—
<b>PROBE TEMP</b>	Not Recommended	Not Recommended
<b>HOLD TEMP</b>	—	90 to 110°F (32 to 43°C)
<b>COOK TIME</b>	FRESH: 1 full-size sheet pan: 20 minutes 2 to 3 full-size sheet pans: 45 minutes FROZEN: 1 full-size sheet pan: 30 minutes • 2 to 3 full-size sheet pans: 45 to 60 minutes	—
<b>MIN. HOLD TIME</b>	None	20 Minutes
<b>MAX. HOLD TIME</b>	None	45 Minutes
<b>OVERNIGHT COOK/HOLD</b>	No	No
<b>FINAL INTERNAL TEMPERATURE</b>	—	—
<b>OVERRIDE ALLOWANCE</b>	—	—
<b>ADDITIONAL INFORMATION</b>	Cookies will continue to bake for approximately 3 minutes after being removed from the oven. Take this factor into consideration to prevent over-baking. Place cookies on bakery rack for cooling.	The above proofing procedure is suggested as a general guideline only. Due to variations in product, product quality, and weight, adherence to the product manufacturer's instructions are recommended.
The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking time may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.		

# SMOKED BEEF

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	BEEF BRISKET, SMOKED	PASTRAMI, SMOKED	BEEF TONGUE, SMOKED
ITEM/AMOUNT	Beef Brisket, Fresh: 9 to 13 lb (4 to 6 kg)	Corned Beef: As needed	Beef Tongue: 3-1/4 lb (1,5 kg) average
INSTRUCTIONS	Season brisket as desired. Place brisket directly on wire shelves fat side down. Briskets can also be wrapped in clear plastic wrap for the cooking, smoking, and holding function (OPTIONAL).	Season as desired. Place directly on wire shelves.	Leave skin on tongue for cooking. Season as desired and place side-by-side in pans. Following the cooking cycle, tongues must remain in the HOLD cycle for four (4) hours. Remove product from pans, skin tongues and return them to the smoker, directly on the wire shelves.
SUGGESTED PAN	None	None	Full-size Hotel Pan w/ 18" x 26" wire rack
NO. OF SHELVES 767, 1767 1000, 1200	3 3	3 3	Cooking: None - Smoking: 2 Cooking: None - Smoking: 2
ITEMS PER SHELF 767, 1767 1000, 1200	3 to 4 roasts 2 to 3 roasts	3 to 4 roasts 2 to 3 roasts	5 tongues per pan 10 tongues per pan
MAX. CAPACITY 767, 1767 1000, 1200	12 roasts - up to 100 lb (45 kg) 6-9 roasts - up to 100 lb (45 kg)	8 roasts 9 roasts	20 beef tongues - 65 lb (30 kg) 30 beef tongues - 98 lb (44 kg)
WOOD CHIP CONTAINER	Full	Full	Full
VENT POSITION	Closed	Closed	Closed
COOK TEMP	250°F (121°C)	250°F (121°C)	250°F (121°C)
PROBE TEMP	160°F (71°C)*	160°F (71°C)*	180°F (82°C)*
HOLD TEMP	160°F (71°C)	160°F (71°C)	150°F (66°C)
COOK TIME	20 minutes per pound for the first roast (44 minutes per kilogram) plus add 30 minutes for each additional roast	20 minutes per pound for the first roast (44 minutes per kilogram) plus add 30 minutes for each additional roast	4-1/2 hours for the first pan plus add 30 minutes for each additional pan.
SMOKE TIME	Due to the density of the meat, set smoke timer for one hour to achieve a medium smoke flavor.	Due to the density of the meat, set smoke timer for one hour to achieve a medium smoke flavor.	After cooking and minimum holding time, leave oven set at a holding temperature of 150°F (66°C). SET SMOKING TIMER: 30 minutes for one pan, 60 minutes for four pans
MIN. HOLD TIME	6 hours	6 hours	4 hours
MAX. HOLD TIME	24 hours	24 hours	8 hours
OVERNIGHT COOK/HOLD	Highly Recommended	Recommended	Optional
FINAL INTERNAL TEMPERATURE	165°F (73°C)	160°F (71°C)	Before activating the Smoking Timer: 188°F (87°C)
OVERRIDE ALLOWANCE	6°F (3,3°C)	20°F (11°C)	12°F (7°C)
ADDITIONAL INFORMATION	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

\* 90°F (32°C) in the 300-TH/III oven

# SMOKED PORK

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	HAM, SMOKED	RIBS, SMOKED	PORK BUTT, SMOKED
<b>ITEM/AMOUNT</b>	Pork Fresh Ham: 14 to 17 lb (6 to 8 kg)	Spareribs or Pork Loin, Back Ribs (BABY BACK RIBS): 1-1/2 down (38 mm or less)	Pork Butt, 8-10lbs
<b>INSTRUCTIONS</b>	Season as desired and place directly on wire shelves.	Ribs can be cooked frozen or thawed. Season as desired. Place ribs on sheet pans, slightly overlapping or use rib rack shelves for more even smoke penetration. If desired, barbecue sauce can be included with initial seasoning to allow it to cook into the ribs.	Season as desired.
<b>SUGGESTED PAN</b>	None	Sheet pan	Full-Size Hotel Pan
<b>NO. OF SHELVES</b> <b>767, 1767</b> <b>1000, 1200</b>	2 3	2 rib racks or 3 flat wire shelves, 13 slabs per rib rack shelf 3 rib racks or 5 flat wire shelves, 13 slabs per rib rack shelf	2 3
<b>ITEMS PER SHELF</b> <b>767, 1767</b> <b>1000, 1200</b>	3 to 4 hams 3 hams	14 to 18 slabs per flat wire shelf 14 to 18 slabs per flat wire shelf	2 2
<b>MAX. CAPACITY</b> <b>767, 1767</b> <b>1000, 1200</b>	6 to 8 hams - up to 100 lb (45 kg) 9 hams - up to 100 lbs (45) kg	60 lb (27 kg) 60 lb (27 kg)	8 full-size pans 4 full-size pans
<b>WOOD CHIP CONTAINER</b>	Full	Full	Full
<b>VENT POSITION</b>	Closed	Closed	Closed
<b>COOK TEMP</b>	250° to 275°F (121° to 135°C)	250°F (121°C)	250°F (121°C)
<b>PROBE TEMP</b>	148°F (64°C)*	Not Recommended	160° to 170°F (71° to 77°C)*
<b>HOLD TEMP</b>	160°F (71°C)	160°F (71°C)	160°F (71°C)
<b>COOK TIME</b>	12 minutes per pound for the first ham (26 minutes per kilogram) plus add 30 minutes for each additional ham.	THAWED RIBS: 2-1/2 to 3-1/2 hours FROZEN RIBS: 3-1/2 to 4-1/2 hours	20 minutes per pound for the first roast (33 minutes per kilogram) plus add 15 minutes for each additional roast.
<b>SMOKE TIME</b>	3 TO 4 SMOKING CYCLES 1 hour for each smoking cycle FILL WOOD CHIP CONTAINER FOR EACH CYCLE	1 hour for medium smoked flavor	1 hour for medium smoked flavor
<b>MIN. HOLD TIME</b>	2 hours	1-1/2 hours	2
<b>MAX. HOLD TIME</b>	10 hours	12 HOURS: At the end of the hold cycle, heated barbecue sauce can be added to the ribs immediately before serving.	12
<b>OVERNIGHT COOK/HOLD</b>	Optional	Optional	Highly Recommended
<b>FINAL INTERNAL TEMPERATURE</b>	100°F (71°)	160° to 170°F (71° to 77°C) Well Done	160°F (71°C)
<b>OVERRIDE ALLOWANCE</b>	12°F (7°C)	—	20°F (11°C)
<b>ADDITIONAL INFORMATION</b>	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

\* 90°F (32°C) in the 300-TH/III oven

# SMOKED PORK AND POULTRY

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	PORK BELLY, SMOKED	DUCK, SMOKED	TURKEY, SMOKED
ITEM/AMOUNT	Pork Belly: As needed	Duck, Whole: 4 to 5 lb (2 kg)	Turkey, Whole: 25 lb (11 kg)
INSTRUCTIONS	Season or cure as desired.	Season as desired. Rub with oil and paprika. Place ducks directly on wire shelves.	Turkey must be fully thawed. Season as desired. Rub with oil, butter, or margarine (optional). Place turkeys directly on wire shelves.
SUGGESTED PAN	Full-Size Hotel Pan	None	None
NO. OF SHELVES 767, 1767 1000, 1200	6 3	2 per compartment 3 per compartment	1 per compartment 2 per compartment
ITEMS PER SHELF 767, 1767 1000, 1200	1 1	6 ducks per shelf 4 ducks per shelf	2 turkeys 2 turkeys
MAX. CAPACITY 767, 1767 1000, 1200	6 pork bellies 3 pork bellies	12 ducks - 60 lb (27 kg) 12 ducks - 60 lb (27 kg)	2 turkeys 4 turkeys
WOOD CHIP CONTAINER	Full	Full	Full
VENT POSITION	Closed	Closed	Closed
COOK TEMP	250°F (121°C)	300°F (149°C)	275°F (135°F)
PROBE TEMP	165° to 170°F (74° to 77°C)*	165° to 170°F (74° to 77°C)*	165° to 170°F (74° to 77°C)*.
HOLD TEMP	160°F (71°C)	160°F (71°C)	160°F (71°C)
COOK TIME	15 minutes per pound for the first pork belly (33 minutes per kg.) plus add 10 minutes for each additional pork belly. Probe to 135°F (57°C)	3-1/2 to 4 hours Probe to 155°F (68°C)	10 minutes per pound for the first turkey (22 minutes per kilogram) plus add 30 minutes for the second turkey. Probe to 155°F (68°C)
SMOKE TIME	1 hour for medium smoked flavor	1 hour	1 hour
MIN. HOLD TIME	—	1 hour	1 to 2 hours
MAX. HOLD TIME	—	8 hours	10 hours
OVERNIGHT COOK/HOLD	Optional	Not Recommended	Highly Recommended. When cooking and holding overnight, set the cook thermostat to 250°F (121°C).
FINAL INTERNAL TEMPERATURE	155°F (68°C)	185° to 190°F (85° to 88°C)	185°F (85°C)
OVERRIDE ALLOWANCE	25°F (14°C)	12°F (7°C)	20°F (11°C)
ADDITIONAL INFORMATION	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

\* 90°F (32°C) in the 300-TH/III oven

# SMOKED FISH AND SHRIMP

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	FISH FILLETS, SMOKED	WHOLE SMOKED SALMON	SHRIMP, SMOKED
ITEM/AMOUNT	Fish fillets: As needed Haddock may be substituted.	Salmon, Whole: 8 to 10 lb (4 to 5 kg)	Shrimp: 16 to 20 count
INSTRUCTIONS	Portion cut fish. Place fillets side-by-side.	Scale and wash fish thoroughly. If desired, fish can be placed in a salt brine and refrigerated for 2 to 3 hours. Place fish upright on sheet pans. DO NOT LAY FISH ON ITS SIDE.	Shrimp may remain in the shell or may be peeled and deveined. Season as desired. Place side-by-side on pans.
SUGGESTED PAN	Full-size Hotel Pan PAN PLACEMENT: Position 1, 4, & 7 FROM THE TOP OF THE OVEN	Sheet Pan	Sheet Pan
NO. OF SHELVES 767, 1767 1000, 1200	None None	2 4	1 full-size sheet pan 5 full-size sheet pan
ITEMS PER SHELF 767, 1767 1000, 1200	2 pans per shelf position 1 sheet pan per shelf position	1 full-size sheet pan 4 full-size sheet pans	1 full-size sheet pan 1 full-size sheet pan
MAX. CAPACITY 767, 1767 1000, 1200	6 pans 7 sheet pans	3 full-size sheet pans - 6 whole salmon 4 full-size sheet pans - 8 whole salmon	4 full-size sheet pans 5 full-size sheet pans
WOOD CHIP CONTAINER	Full	Full	Full
VENT POSITION	Closed	Closed	Closed
COOK TEMP	250°F (121°C)	275°F (135°C)	250°F (121°C)
PROBE TEMP	Not Recommended	Not Recommended	Not Recommended
HOLD TEMP	160°F (71°C)	160°F (71°C)	160°F (71°C)
COOK TIME	1-1/2 to 2 hours	2 to 2-1/2 hours	45 minutes to 1 hour
SMOKE TIME	1 hour	1 TO 2 SMOKING CYCLES 1 hour for each smoking cycle FILL WOOD CHIP CONTAINER FOR EACH CYCLE	45 minutes
MIN. HOLD TIME	None	1 to 2 hours	none
MAX. HOLD TIME	3 to 4 hours	10 hours	1 hour
OVERNIGHT COOK/HOLD	Not Recommended	Not Recommended	Not Recommended
FINAL INTERNAL TEMPERATURE	150°F (66°C)	150°F (66°C)	150° to 160°F (66° to 71°C)
OVERRIDE ALLOWANCE	—	35°F (19°C)	—
ADDITIONAL INFORMATION	—	—	—

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.

# COLD SMOKING

## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	COLD SMOKED SALMON
ITEM/AMOUNT	SAUMON FUME: Fresh Salmon Fillets 2-1/2 to 4 lb (1 to 2 kg) each
INSTRUCTIONS	<p><u>INGREDIENTS REQUIRED</u></p> <p>Fresh Salmon Fillets or Sides Sea Salt: Large Crystals Granulated or Raw Sugar</p> <p><u>SUPPLIES REQUIRED</u></p> <p>Clear Plastic Wrap Paper Towel Wire Mesh Grids Digital Thermocouple Thermometer (TO MONITOR INTERNAL PRODUCT TEMPERATURE) Tweezers Ice: 3 to 4 lb (1 to 2 kg)</p> <p><u>PREPARATION</u></p> <p>Remove bones from fillets with a tweezers to avoid rupturing tissue.</p> <p><u>SALTING</u></p> <p>50% Sea Salt or Kosher Salt 50% Granulated or Brown Sugar (FOR RICHER COLOR)</p> <p>To remove moisture from the raw salmon, blend salt and sugar mixture thoroughly and pack firmly around each fillet. Cover salt-filled pans with clear plastic wrap and refrigerate for 24 hours. Following the 24 hour refrigeration period, remove fillets from salt/sugar mixture and rinse thoroughly under cold, running water. Pat dry with paper toweling. Place fillets side-by-side on a sheet pan and return, uncovered, to the refrigerator for a period of 1-6 hours for the final drying period.</p>
SUGGESTED PAN	Wire grid
NO. OF SHELVES 767, 1767 1000, 1200	3 4
ITEMS PER SHELF 767, 1767 1000, 1200	3 fillets/sides per shelf 3 fillets/sides per shelf
MAX. CAPACITY 767, 1767 1000, 1200	9 fillets 12 fillets
WOOD CHIP CONTAINER	Full
VENT POSITION	Closed
SMOKE TIME	10 to 20 minutes
OVEN TIME REQUIRED	1-2 hours
OVERRIDE ALLOWANCE	—
FINAL INTERNAL TEMPERATURE	NOT TO EXCEED 77°F (25°C)
The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.	

## SMOKING PROCEDURE

### OVEN MUST BE AT ROOM TEMPERATURE BEFORE BEGINNING THE COLD SMOKE PROCEDURE.

Soak wood chips in water according to directions (5-15 minutes), fill wood chip container full and insert in chip holder located at the back of the oven.

Fill pan with ice and locate pan in shelf position number 7 (just above wood chip container).

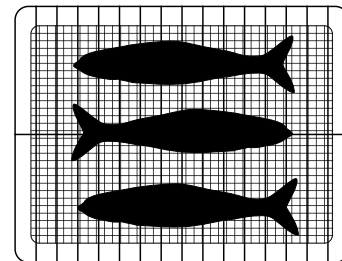
Place prepared salmon fillets on a wire grid as indicated on the diagram and insert wire grid on oven shelf beginning with the top shelf position.

Insert probe of thermocouple thermometer into the center of the middle salmon fillet located in the top shelf position or central shelf position when smoking a full load. To maintain proper color, the internal temperature of the salmon must not exceed 77°F (25°C). For this reason, it is important to begin the smoking process with the oven at room temperature.

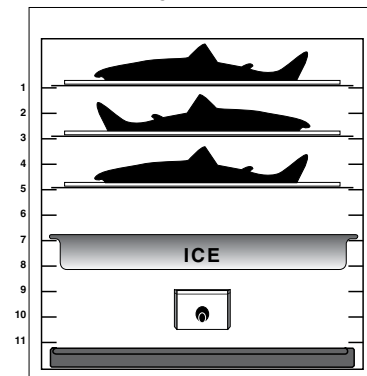
Make certain oven vents are closed. Close oven door and set smoke time from 10 to 20 minutes depending on taste preference. When the smoke timer cycles to the OFF position, the fillets must remain in the oven for a period of 1-2 hours. Do not open the oven door during this period.

Following the required oven time, remove the fillets, cover with clear plastic wrap and refrigerate until fully chilled.

TOP VIEW



SIDE VIEW



## PRODUCT SPECIFICATIONS AND PREPARATION

PRODUCT >	COLD SMOKED CANNED TOMATOES	RECIPE	RECIPE
ITEM/AMOUNT	As needed		
INSTRUCTIONS	Add tomatoes to pan.		
SUGGESTED PAN	Full-Size Hotel Pan		
NO. OF SHELVES 767, 1767 1000, 1200	4 4		
ITEMS PER SHELF 767, 1767 1000, 1200	2 full-size pans 1 full-size pan		
MAX. CAPACITY 767, 1767 1000, 1200	8 full-size pans 4 full-size pans		
WOOD CHIP CONTAINER	Full		
VENT POSITION	Closed		
COOK TEMP	—		
HOLD TEMP	—		
COOK TIME	—		
PROBE TEMP	Not Recommended		
SMOKE TIME	15 minutes Leave in for 1 hour.		
MIN. HOLD TIME	—		
MAX. HOLD TIME	—		
OVERNIGHT COOK/HOLD	—		
FINAL INTERNAL TEMPERATURE	—		
OVERRIDE ALLOWANCE	—		
ADDITIONAL INFORMATION	—		

The time and temperature are suggested guidelines only. All cooking should be based on internal product temperatures. Due to variations in product quality, weight and desired degree of doneness, the cooking timer may need to be adjusted accordingly. Always follow local health (hygiene) regulations for all internal temperature requirements.



**ALTO-SHAAM®**



**Ecologically Smart.  
Economically Smart.**

World Headquarters  
W164 N9221 Water Street  
P.O. Box 450  
Menomonee Falls, WI 53052-0450, U.S.A.  
Phone 262-251-3800  
U.S.A. & Canada Toll Free 1-800-558-8744  
Fax 262-251-7067  
Fax U.S.A. only 1-800-329-8744  
[www.alto-shaam.com](http://www.alto-shaam.com)

Price: U.S.\$15.00  
Printed in the U.S.A.  
MN-29492 • 02/13

© 2011 Alto-Shaam, Inc.

